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ABSTRACT

A detailed statistical profile of education in the United States is based on information from the Center for Education Statistics' many studies and surveys as well as from other sources within and outside government. Along with the narrative, each topic entry consists of a table and a chart highlighting the data in the table. This 12th annual report presents some 45 measures of education grouped within the framework of "outcomes" of education, such as test score results; the "resources" available for education, like per pupil expenditures and teacher salaries; and the "context" in which education takes place, that is, environmental factors, including student characteristics, public opinion about the schools, and legislative action on school standards. Although the majority of indicators address aspects of elementary and secondary education, 10 indicators describe postsecondary education. The second section consists of the following issue papers: "Preschool Enrollment: Trends and Implications" (Audrey Pendleton); "Trends in Elementary and Secondary Public School Enrollment" (Phillip Kaufman); "School Dropouts in the United States" (Aaron M. Pallas); "Growth in Higher Education Enrollment: 1978-1985" (Phillip Kaufman); and "Private School Enrollment and Tuition Trends" (Mary Frase Williams). The third section consists of appendices with supplementary tables, sources of data, technical notes, standard error tables, and a glossary. (MLF)

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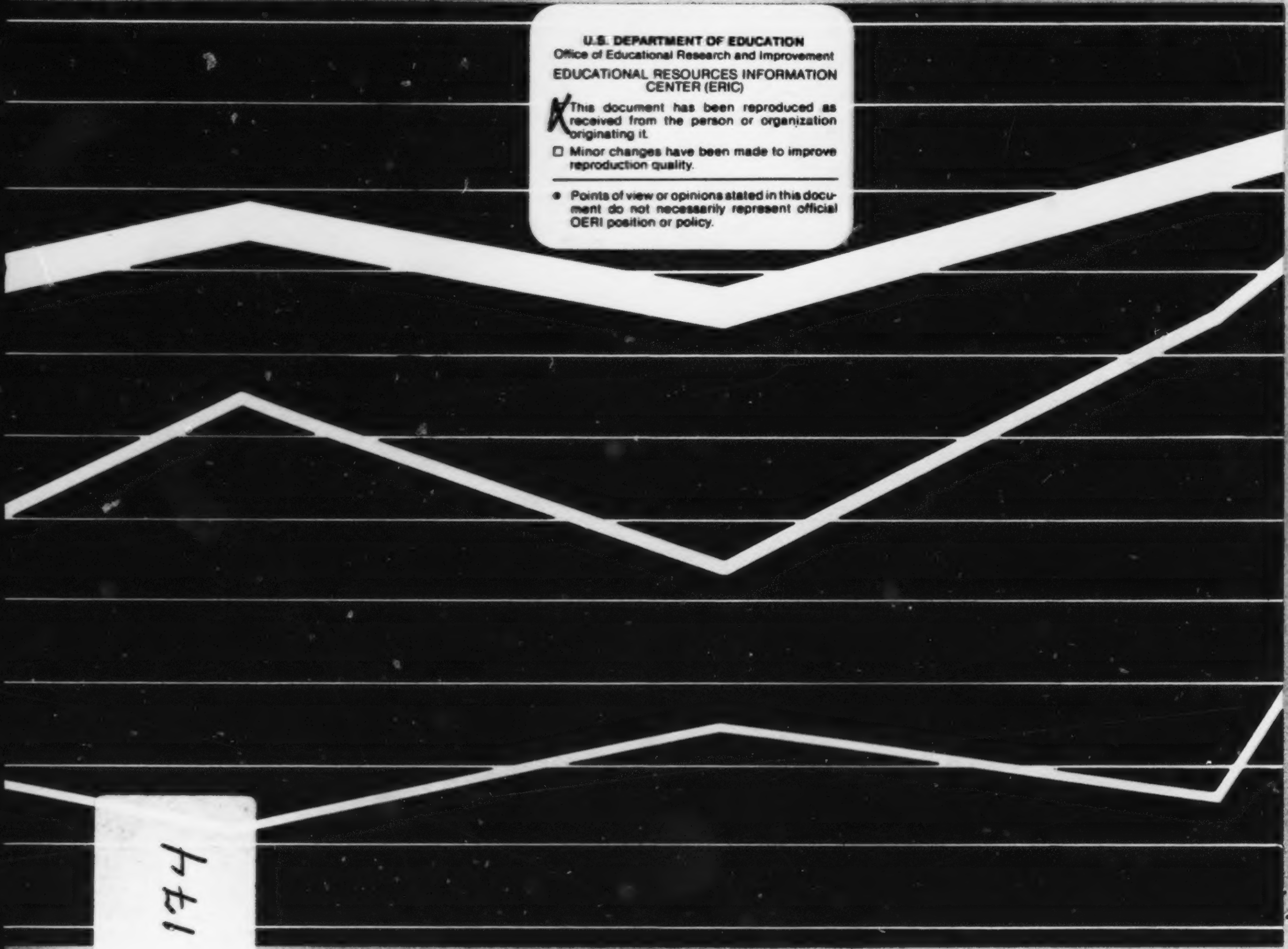
THE CONDITION OF EDUCATION

Center for Education Statistics

A Statistical Report



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EA 019 174

1986 Edition

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Office of Educational Research and Improvement
U.S. Department of Education

Highlights

Elementary and Secondary Education

There have been marked improvements in the reading achievement of black and Hispanic students between 1971 and 1984, reducing the gap between their performance and that of white students. Despite the gains, the average reading proficiency of black and Hispanic students remains quite low and in need of further improvement. For example, the average reading proficiency of black and Hispanic 17-year-olds is only slightly higher than that of white 13-year-olds.

SAT scores declined steadily from 1963 to 1980, but have increased since then. The increase from 1984 to 1985 of 9 points is the largest annual increase in recent years and represents a recovery to 1975 levels.

Between the 1982-83 and 1985-86 school years, expenditures per pupil for the Nation's public elementary and secondary schools increased by 12.3 percent in constant dollars, for an average annual increase of about 4 percent.

At the elementary school level, the ratio of pupils to teachers has dropped from nearly 29:1 in 1959-60 to an estimated 20:1 in 1984-85. At the secondary school level, this ratio has fallen from about 22:1 to an estimated ratio of around 16:1 over the same period.

The average salary of public school teachers, when adjusted for inflation, declined in the 1970's but has been gradually rising since 1981.

In 1984, earnings for male teachers exceeded the average earnings for all full-time workers, but were below the average earnings for all managers and professional workers. While earnings for female teachers exceeded those for female full-time workers and sales workers, they lagged behind those for female professionals that year.

Students from homes with many reading materials who watched little television read much better than students from homes with few reading materials who watched a great deal of television.

Approximately half of the children age 5 to 14 changed residence between 1975 and 1980; almost 10 percent moved to a different State.

On the average, morale is quite high among public and Catholic high school teachers. Catholic high school teachers report higher levels of principal leadership, staff cooperation, student behavior, control over school policy, and morale than public high school teachers, however.

The public puts a higher value on job-oriented education than teachers. Furthermore, twice as many members of the general public as teachers give high ratings to the educational goal of developing in students standards of right and wrong.

After 20 years of stability there has been a sharp increase since 1980 in the number of Carnegie units in mathematics and science required by the States for high school graduation.

Higher Education

There has been a shift away from the traditional arts and sciences in the distribution of bachelor's degrees conferred in the last decade. The proportion of bachelor's degrees in job-related fields, such as business, engineering, and computer sciences, has increased considerably, while the number and proportion of arts and sciences degrees has been declining.

Those who attend college are more successful in the job market and have higher incomes than those who do not attend college, and these advantages increase with more years of higher education.

In recent years (academic years 1975-76 through 1983-84), tuition and fees as a share of total revenues for institutions of higher education have increased while revenues from various governmental sources have declined.

Of the major Federal student financial aid programs, the one with the largest growth in recent years, measured in terms of the number of recipients, is the Guaranteed Student Loan program.

The Condition of Education

1986 Edition

Statistical Report
Center for Education Statistics

Edited by:
Joyce D. Stern and Mary Frase Williams

U.S. Department of Education
William J. Bennett, Secretary

Office of Educational Research and Improvement
Chester E. Finn, Jr., Assistant Secretary

Center for Education Statistics
Emerson J. Elliott, Director

Center for Education Statistics

"The purpose of the Center shall be to collect and disseminate statistics and other data related to education in the United States and in other nations. The Center shall . . . collect, collate, and from time to time, report full and complete statistics on the conditions of education in the United States; conduct and publish reports on specialized analyses of the meaning and significance of such statistics; . . . and review and report on education activities in foreign countries,"—Section 406 (b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e–1).

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Director's Statement

> "Nothing the Federal Government does in the field of education is more fundamental or more important than supplying the American people with prompt, reliable, and comprehensible data on the educational performance of our children."
>
> —William J. Bennett
> Secretary of Education
> September 15, 1985

The purpose of the Center for Education Statistics* in today's Department of Education is chiefly to carry out the Department's original mission, established by the Congress 119 years ago. This mission focuses on "collecting such statistics and facts as shall show the condition and progress of education in the several States and Territories," so that the people of this country, and their leaders, may have an informed basis for debate and decisionmaking regarding educational policies and practices. *The Condition of Education* report is the Center's major response to this continuing mandate.

In the past, this report presented information from the Center's many studies and surveys as well as from other sources within and outside government, for a detailed statistical profile of education in this country. It employed a chartbook format to convey statistical information in a nontechnical way to a general audience. In addition to some 100 charts, the report also featured chapters dealing with broad topics in education.

Although the content and format of the report continued to improve over time, two troubling concerns came into prominence. The first was the extent to which much of the tabular material in *The Condition of Education* duplicated what could be found in the Center's other major annual publication, *The Digest of Education Statistics*. The second concerned the heavy emphasis in the published data on inputs into the education process and the lack of information on the outcomes and results of that process, including the association of results with pertinent characteristics of schools and the context in which they function. The public and policymakers have been calling for more data on student performance and other outcome measures.

In response to these concerns, the Department of Education initiated an effort to identify, develop, and present to the public a concise set of measures—or "indicators"—of the health and progress of education in the Nation. It also has taken steps to make the *Condition* and the *Digest* reports less overlapping.

The first segment of the new *Condition* retains the popular chartbook format, but adds narrative to introduce and explain each of the "indicators." The second large segment of the report features issue papers that present data and analyze their implications for selected educational topics of current interest. Together these sections and the interspersed narrative represent our attempt to provide information about the current condition of education in the United States in a more usable form and more closely in line with the needs of today, as expressed in the Secretary's statement above.

The data upon which *The Condition of Education* is based come from a variety of sources. In particular, the volume draws upon the Center's ongoing statistical program, which includes

- Elementary/Secondary Education—data collected annually on public school enrollments, staff, and finances; periodic surveys of specific attributes of public and private schools; assessments of student competencies; and data on teacher demand and supply.
- Higher Education—data collected annually on institutions, enrollment, degrees, salaries, and finances; cyclical surveys of the residence and migration of students; and periodic data on higher education facilities and on the employment of recent college graduates.
- Longitudinal Studies—data collected on variables associated with high school student performance and other student behaviors, decisions, and plans, postsecondary attendance as well as the transition from school to work for three cohorts of students: 1972 seniors (fifth followup in 1986); 1980 sophomores and 1980 seniors (third followup in 1986); with a new study—the first ever involving 8th graders—planned for 1988.

Just as the Center for Education Statistics has modified *The Condition of Education* to meet changing information needs, the Center is also deeply involved in major redesign efforts intended to keep the underlying data collections similarly current. A revised postsecondary data collection system is now being implemented, and work is well advanced on restructuring the elementary/secondary collection to enhance its comprehensiveness, integration, and timeliness.

In the case of private schools, a vital and dynamic part of American education, more comprehensive and better quality data need to be gathered to show not only comparisons with public schools but also to give a more complete picture of private education itself. The Center embarked on a new series of surveys of private education beginning in 1983 that will yield comparable data in future years. The 1987 *Condition of Education* will include the results of the just-completed 1985 Private School Survey and we will be able to draw some comparisons with 1983. In addition, we expect to highlight special features of private schools in the 1987 *Digest of Education Statistics*.

Also lacking in the data are adequate indicators on elementary schools and data on outcomes in postsecondary education. In each case, the Center has initiated action to fill these gaps in information for future reports.

Thus, future editions of *The Condition of Education* will continue to provide the basis for informed assessment and discussion of educational issues in the tradition begun 12 years ago with the publication of the first *Condition of Education*.

Emerson J. Elliott

* Note: While this report was in press, the name of the agency was changed from the Center for Statistics to the Center for Education Statistics. The former name has been used throughout this volume.

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The Condition of Education, 1986 Statistical Report, was prepared in the Center for Statistics (CS), Office of Educational Research and Improvement (OERI), by the Condition of Education Division under the general supervision of Paul R. Hall, Division Director.

Joyce D. Stern was responsible for the development and preparation of the indicators section of the report and the supporting appendices, and wrote the Introduction. Mary Frase Williams oversaw the development and editing of Section II of the report containing issue papers.

The following staff members contributed to all sections of the report: Phillip Kaufman, Audrey Pendleton, Aaron Pallas, Peter Stowe, and Richard Verdugo. Barbara Richardson worked on selected indicators. Debra Gerald prepared several indicators and all projection data used. Curt Baker, Pat Brown, Zola Brown, Marjorie Chandler, Leo Eiden, Henry Gordon, Charlene Hoffman, Paul Horn, Celeste Loar, Thomas Snyder, and William Sonnenberg assisted with various aspects of the report. Carlyn Lucas and Carmelita Stevenson, and Rochelle Moore typed portions of the manuscript.

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Reviewers of individual issue papers included: John Augenstein, former superintendent, Diocesan schools, Youngstown, Ohio; James Catterall, UCLA; John Convey, Catholic University of America; Dwight Crum, retired, U.S. Department of Education; David Drew, Claremont Graduate School; David Eggebeen, Carolina Population Center; Carol Francis, Urban Universities; Cheryl Hayes, National Research Council; Sharon Lynn Kagan, Yale University; Irwin Kirsch, National Assessment of Educational Progress; Robert Lyke, Congressional Research Service; Michael O'Keefe, Consortium for the Advancement of Private Higher Education; Barbara Schneider, Northwestern University; Joel Sherman, Pelavin Associates; Paul Siegel, Bureau of the Census; Robert Smith, Council on American Private Education; Gregory Spencer, Bureau of the Census; and Suzanne Triplett, Council of Chief State School Officers.

Table of Contents

Page

Introduction 18

Section I: Education Indicators

1. Indicators of Elementary and Secondary School Education

Overview 22
by Joyce D. Stern

A. Outcomes

Student Performance

1:1 Reading performance of 9-, 13-, and 17-year-old students ... 28
1:2 Reading performance by race and ethnicity of 9-, 13-, and 17-year-old students ... 30
1:3 Mathematics and science performance of 9-, 13-, and 17-year-old students ... 32
1:4 International mathematics achievement of students in the 8th and 12th grades ... 34
1:5 College entrance examination scores ... 36
1:6 High school graduates scoring over 600 on the Scholastic Aptitude Test ... 38
1:7 "New Basics" credits earned by high school graduates ... 40

Transitions

1:8 High school completion by race and ethnicity ... 42
1:9 Post-high school activities of students ... 44
1:10 Literacy skills of young adults ... 46
1:11 College-level remedial course offerings and enrollments ... 48
1:12 Participation of public and private high school graduates in postsecondary education ... 50

B. Resources

Fiscal Resources

1:13 Current expenditures per pupil in public schools ... 52
1:14 Public school revenues ... 54
1:15 National index of public school finance in relation to population ... 56

Human Resources

1:16 Instructional staffing patterns in the public schools ... 58
1:17 Pupil/teacher ratios in public schools ... 60
1:18 Demand for new hiring of teachers ... 62
1:19 Supply of new teacher graduates ... 64
1:20 Test scores of teachers compared with other college graduates ... 66
1:21 Average annual salary of public school teachers ... 68
1:22 Teachers' earnings compared to other professional workers' ... 70

C. Context

Student Characteristics

1:23 School enrollment rates by selected age groups ... 72
1:24 Mobility of elementary and secondary schoolchildren ... 74

Table of Contents (Continued)

Learning Environment

1:25 Aspects of the home environment and reading performance 76
1:26 Disruptive behavior in public schools 78
1:27 Student drug and alcohol abuse 80
1:28 School climate in public and Catholic high schools 82
1:29 Teachers' job satisfaction 84

Perceptions

1:30 Goals of education as seen by teachers and the general public 86
1:31 School problems as seen by teachers and the public 88
1:32 Public opinion ratings of schools and other national institutions 90

State Governance

1:33 State high school graduation requirements in basic subjects 92
1:34 Minimum competency testing for high school graduation 94
1:35 Competency testing for teacher certification 96

2. Indicators of Postsecondary Education

Overview 99
by Mary Frase Williams

A. Outcomes

Student Performance

2:1 College student achievement: A selected profile 102

Transitions

2:2 Bachelor's degrees conferred, by field 104
2:3 Economic outcomes of higher education 106

B. Resources

Fiscal Resources

2:4 Current expenditures per student in institutions of higher education 108
2:5 Revenues of higher education institutions 110
2:6 Federal student financial aid programs and awards 112

C. Context

Student Characteristics

2:7 Higher education enrollments by type and control of institution 114
2:8 Selected characteristics of students in higher education 116
2:9 Participation rates for higher education by race/ethnicity 118

Table of Contents (Continued)

Perceptions

2:10 Public opinion of higher education 120

Section II: Issue Papers

Preschool Enrollment: Trends and Implications 124
by Audrey Pendleton
Trends in Elementary and Secondary Public School Enrollment 140
by Phillip Kaufman
School Dropouts in the United States 158
by Aaron M. Pallas
Growth in Higher Education Enrollment: 1978 to 1985 175
by Phillip Kaufman
Private School Enrollment and Tuition Trends 186
by Mary Frase Williams

Section III. Appendices

A. Supplementary Tables 209
B. Sources of Data 228
C. Technical Notes 238
D. Standard Error Tables 247
E. Glossary 266

Table of Entries

Page

Section I: Education Indicators

1. Elementary and Secondary Education Indicators

A. Outcomes

Student Performance

1:1 Percentage of 9-, 13-, and 17-year-old students at or above the five reading proficiency levels: 1971 to 1984 28
1:2 Average reading proficiency of white, black, and Hispanic students: 1971 to 1984 30
1:3 Average mathematics and science performance of 9-, 13, and 17-year-olds: 1970 to 1982 32
1:4A Average percent correct on an international test of mathematics achievement for students in 8th grade or equivalent in participating developed countries: 1982 34
1:4B Average achievement score on an international test in algebra and calculus takend by advanced mathematics students in the 12th grade or equivalent in participating developed countries: 1982 34
1:5A Scholastic Aptitude Test scores: School year ending 1963 to 1985 36
1:5B American College Testing scores: School year ending 1971 to 1985 36
1:6 Percentage of high school graduates scoring above 600 on the SAT verbal and mathematics tests: 1972 to 1985 38
1:7 Average credits earned by 1982 high school graduates by subject area and number of "New Basics" credits recommended by the National Commission on Excellence in Education 40

Transitions

1:8 High school completion by race and Hispanic origin, persons age 18 to 19 and 20 to 24: 1974-1985 42
1:9 A comparison of activities after high school reported by the classes of 1972 and 1980 44
1:10 Percentage of young adults at or above three levels of difficulty on the prose scale, document scale, and NAEP scale, by education: 1985 46
1:11A Institutions of higher education offering remedial/developmental courses in reading, writing, and mathematics, by control, type of institution, and admissions criteria: 1983-1984 48
1:11B Percentage of freshmen participating in remedial/developmental courses offered by institutions of higher education: 1983-1984 48
1:12 Postsecondary enrollment and completion rates for 1980 high school graduates, by control of high school 50

B. Resources

Fiscal Resources

1:13 Current expenditures per pupil in average daily attendance in public elementary and secondary schools: 1969-70 to 1985-86 52
1:14 Sources of public elementary and secondary school revenues: 1920 through 1984 54
1:15 National index of public school revenues in relation to personal income: 1930 through 1986 56

Human Resources

1:16 Trends in the number of instructional staff: 1970-71 to 1984-85 58
1:17 Trends in pupil/teacher ratios in public elementary and secondary schools: 1959-60 to 1984-85 60
1:18 Trends in estimated demand for new hiring of classroom teachers in elementary/secondary schools: 1980 to 1993 62
1:19 Trends in supply of new teacher graduates, with alternative projections: 1980-81 to 1993-94 64
1:20 Test scores of teachers and all college graduates 66
1:21 Estimated average annual salaries of classroom teachers in public elementary and secondary schools, by level: Selected years 1960-61 to 1985-86 68
1:22A Comparisons of earnings for individuals in teaching and in other selected occupations: 1961 and 1981 .. 70
1:22B Comparisons of earnings for individuals in teaching and in other selected occupations: 1984 70

C. Context

Student Characteristics

1:23 School enrollment rates by selected age groups: 1964 to 1985 72
1:24 Percentage of children 5 to 14 years old who changed residence between 1975 and 1980, by region and State of residence in 1980 74

Learning Environment

1:25 Average reading proficiency of 9-, 13-, and 17-year-old students by reading materials in the home and television viewing: 1984 76
1:26 Incidence of selected student infractions in public secondary schools by selected school characteristics: 1983-84 78
1:27 Trends in the prevalence of student drug and alcohol use: Percentage of high school seniors using substances in different time periods: 1975 to 1985 80
1:28 School climate in public and Catholic high schools: 1984 82
1:29 Percentage of teachers satisfied with teaching as a career: 1985 84

Perceptions

1:30 The perceived importance by the public and by teachers of selected goals of education: 1984 86
1:31 Percentage of teachers and the general public naming selected issues as a major problem facing the public schools: 1984 88
1:32A The public's rating of the schools: Percentage giving the schools and A, B, C, D, or F 90
1:32B The public's confidence in selected institutions: The percentage having a "great deal" or "quite a lot" of confidence 90

State Governance

1:33 Trends in State-required Carnegie units for high school graduation, for language arts, social studies, mathematics, and science: 1958 to 1985 92
1:34 States which have enacted minimum competency testing requirements for high school graduation: 1985 . 94
1:35 States which have enacted testing for initial certification of teachers: 1986 96

2. Postsecondary Education Indicators

A. Outcomes

Student Performance

2:1 Changes in performance on Graduate Record Examination tests, between 1964 and 1985 (unless otherwise noted) 102

Transitions

2:2 Bachelor's degrees conferred, by field: 1970-71 to 1982-83 104
2:3 Median income of full-time male workers with 4 years of high school, ratio of income of full-time male workers by educational attainment: 1970 to 1983, and unemployment rates for males by educational attainment 106

Fiscal Resources

2:4 Changes in expenditures per full-time equivalent student in institutions of higher education in current and constant dollars, by type and control of institution: Fiscal years 1980 and 1984 108
2:5 General education revenues and shares of general education revenues for institutions of higher education by source of revenue and by control: Selected fiscal years 1976 through 1984 110
2:6 Average amounts received in current dollars and number of recipients, by type of Federal postsecondary student aid program: 1973-74 through 1985-86 112

Characteristics

2:7 Total enrollment in institutions of higher education, by type and control: 1970 to 1985 114
2:8 Trends in total enrollment in institutions of higher education, by part-time students, women, students 25 years or older, and graduate or professional students: Fall 1970 to fall 1984 116
2:9 Participation rates of 18- to 24-year-olds in higher education by race/ethnicity: 1970 to 1985 118
2:10 Public opinion of the overall quality of a college education in the United States: 1982 to 1985 120

Section II: Issue Papers

Preschool Enrollment: Trends and Implications

1 Percent of 3- and 4-year-olds enrolled in preschool by family income, control of school, race, and age: 1984 127
2 Percent of 3- and 4-year-olds enrolled in preschool by mother's work status, control of school, race, and age: 1984 128
3 Percent of 3- and 4-year-old preschool students enrolled full day by mother's work status and race: 1984 129
4 Percent of 3- and 4-year-olds enrolled in preschool by mother's work status, control of school, race, and mother's marital status: 1984 130
5 Percent of white 3- and 4-year-olds enrolled in preschool by family income and age: 1975 and 1984 131

6 Percent of white 3- and 4-year-olds enrolled in preschool by mother's work status and age: 1975 and 1984 131
7 Percent of white 3- and 4-year-olds enrolled in preschool by mother's work status and mother's marital status: 1975 and 1984 132
A1 Standard errors (and unweighted numbers) for Table 1: Percent of 3- and 4-year-olds enrolled in preschool by family income, control of school, race, and age: 1984 135
A2 Standard errors (and unweighted numbers) for Table 2: Percent of 3- and 4-year-olds enrolled in preschool by mother's work status, control of school, race, and age: 1984 136
A3 Standard errors (and unweighted numbers) for Table 3: Percent of 3- and 4-year-old preschool students enrolled full day by mother's work status and race: 1984 136
A4 Standard errors (and unweighted numbers) for Table 4: Percent of 3- and 4-year-olds enrolled in preschool by mother's work status, control of school, race, and mother's marital status: 1984 137
A5 Standard errors (and unweighted numbers) for Table 5: Percent of white 3- and 4-year-olds enrolled in preschool by family income and age: 1975 and 1984 137
A6 Standard errors (and unweighted numbers) for Table 6: Percent of white 3- and 4-year-olds enrolled in preschool by mother's work status and age: 1975 and 1984 138
A7 Standard errors (and unweighted numbers) for Table 7: Percent of white 3- and 4-year-olds enrolled in preschool by mother's work status and mother's marital status: 1975 and 1984 138

Trends in Elementary and Secondary Public School Enrollment

1 Public elementary and secondary enrollment, by race/ethnicity: 1976 to 1980 144
2 Proportion of persons and children living below the poverty level: 1959 to 1985 149
3 Poverty rates for children under 18, by State: 1969 and 1979 150
A1 Standard errors for Table 2: Proportion of persons and children living below the poverty level: 1959 to 1985 155

School Dropouts in the United States

1 High school completion rates using Bureau of the Census and Center for Statistics data: 1974 to 1985 .. 162
2 Dropout rates for 1980 high school sophomores by sex and selected background characteristics 163
3 Proportion who have completed high school by age, October 1985 167
A1 Standard errors and sample sizes for Table 2: Dropout rates for 1980 high school sophomores by sex and selected background characteristics 172
A2 Standard errors for Table 3: Proportion of high school completers by age, October 1985 172

Growth in Higher Education Enrollment: 1978 to 1985

1 College enrollment and total population by age category: 1978 to 1985 178
2 Persons 18 to 24 years old, by high school graduation status, college enrollment status, and race: 1978 to 1984 181
A1 Standard errors for Table 1: College enrollment and total population by age category: 1978 to 1985 183
A2 Standard errors for Table 2: Persons 18 to 24 years old, by high school graduation status, college enrollment status, and race: 1978 to 1985 184

Private School Enrollment and Tuition Trends

1 Private school enrollment trends: 1970 to 1985 188
2 Proportion of all students attending private schools, by region and metropolitan status 190
3 Enrollment rates in private elementary and secondary schools by race/ethnicity, family income, and control of school: October 1985 191
4 Tuition and fees in private schools, by level and control: October 1985 196
5 Median private school tuition and fees, by level, control, region, and metropolitan status: 1985 197
6 Tuition and fees in private schools by level and family income: 1982 and 1985 200
A1 Standard errors for Table 1: Private school enrollment trends: 1970 to 1985 204
A2 Standard errors for Table 2: Proportion of all students attending private schools, by region and metropolitan status 204
A3 Standard errors for Table 3: Enrollment rates in private elementary and secondary schools by race/ethnicity, family income, and control of school: October 1985 205
A4 Standard errors for Table 4: Tuition and fees in private schools, by level and control: October 1985 205
A5 Standard errors for Table 5: Median private school tuition and fees, by level, control, region, and metropolitan status: 1985 206
A6 Standard errors for Table 6: Tuition and fees in private schools by level and family income: 1982 and 1985 206

Section III. Appendices for Education Indicators

1. Appendix A. Supplementary Tables

A1 Average reading performance of 9-, 13-, and 17-year-old students by selected characteristics: 1971 to 1984 209

A2 Average science performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1970 to 1982 212
A3a Average percent correct on an international test of mathematics achievement for students in the 8th grade, or equivalent, in participating developed countries: 1982 214
A3b Average achievement score on an international test in algebra and calculus taken by advanced mathematics students in the 12th grade, or equivalent, in participating developed countries: 1982 215
A4a State tables of college entrance examination scores: 1982 and 1985 216
A4b Average scores on the Preliminary Scholastic Aptitude Test: 1959 to 1984 217
A5 Percentage of high school graduates scoring 26 or more on the English and mathematics tests in the American College Testing Program: 1972 to 1984 217
A6 Average proficiency scores on the literacy scales for the young adult population, by selected characteristics: 1985 218
A7 Current expenditures per pupil in average daily attendance in public elementary and secondary schools by State: 1970-71 and 1983-84 219
A8 State indices of public school finance in relation to population: 1972-73 and 1983-84 220
A9 Past and projected trends in elementary/secondary public school enrollment, by grade level: Fall 1980 to fall 1984 221
A10 Percentage of children 5 to 14 years old who changed residence between 1975 and 1980, by region, State of residence in 1980, and type of move 222
A11 Number of courses required for high school graduation in 1980 and 1985, year effective, and increase of units required, by State: 1985 224
A12 State minimum competency testing for elementary and secondary assessment purposes: 1985 225
A13a Percent instructional expenditures are of total expenditures for institutions of higher education, by type and control: Fiscal years 1979 through 1984 226
A13b Scholarship and fellowship expenditures as a percentage of total expenditures for institutions of higher education, by type and control: Fiscal years 1979 through 1984 226
A14 Average amount of awards received for six Federal student financial aid programs: Fiscal years 1973-74 to 1984-85 227

2. Appendix D. Standard Error Tables

D1 Standard errors for percentage of 9-, 13-, and 17-year-old students at or above the five reading proficiency levels: 1971 to 1984 (Indicator 1:1) 248
D2 Standard errors for average reading proficiency of white, black, and Hispanic students: 1971 to 1984 (Indicator 1:2) 248

D3 Standard errors for average mathematics and science performance of 9-, 13-, and 17-year-olds: 1970 to 1982 (Indicator 1:3) 249
D4 Standard errors for high school graduates by race, Hispanic origin, and age: 1974 to 1985 (Indicator 1:8) 249
D5 Standard errors for post-high school activities of students (Indicator 1:9) 250
D6 Standard errors for percentage of young adults at or above three levels of difficulty on the prose scale, document scale, quantitative scale, and NAEP reading scale, by educational attainment: 1985 (Indicator 1:10) 251
D7 Standard errors for postsecondary enrollment and completion rates for 1980 high school graduates, by control of high school (Indicator 1:12) 252
D8 Standard errors for test scores of teachers and all college graduates (Indicator 1:20) 253
D9 Standard errors for school enrollment rates by selected age groups (Indicator 1:23) 253
D10 Standard errors for average reading proficiency of 9-, 13-, and 17-year-old students, by reading materials in the home and television viewing: 1984 (Indicator 1:25) 253
D11 Standard errors for incidence of selected student infractions in public secondary schools in 1983-84, by selected school characteristics (Indicator 1:26) 254
D12 Standard errors for school climate in public and Catholic high schools: 1984 (Indicator 1:28) 254
D13 Sampling tolerances for percentage of teachers satisfied with teaching as a career: 1985 (Indicator 1:29) . 255
D14 Sampling tolerances for percentages from Gallup Polls (Indicators 1:30, 1:31, 1:32) 256
D15 Standard errors for ratio of income of full-time male workers by educational attainment: 1970 to 1983 (Indicator 2:3) 257
D16 Standard errors for percentage of students 25 years old or older enrolled in a higher education institution (Indicator 2:8) 257
D17 Standard errors for participation rates of 18- to 24-year-olds in higher education by race/ethnicity: 1970 to 1985 (Indicator 2:9) 258
D18 Standard errors for public opinion of the overall quality of a college education in the United States: 1982 to 1985 (Indicator 2:10) 258
D19 Standard errors for average reading performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1971 to 1984 (Table A1) 259
D20 Standard errors for average science performance of 9-, 13-, and 17-year-old students, by selected characteristics and school year (Table A2) 262
D21 Standard errors for average proficiency scores on the literacy scales for the young adult population, by selected characteristics: 1985 (Table A6) 265

Introduction

The Center for Statistics, in responding to the Congressional mandate for an annual report on the condition of education, continually faces the challenge of how to select the most important data items from available education statistics and present them in an easily readable form. In part to produce a more focused view of the state of education in this country, and in part to minimize duplication with its other major publication, *The Digest of Education Statistics*, this edition of *The Condition of Education* features key items of information as education "indicators." These indicators are the best statistics available to describe major topics of interest and concern in education today. Readers who need greater detail; more traditional quantitative details on enrollment, teachers, expenditures, revenues, graduates, and degrees; or a wider scope of information should refer to the *Digest*, which is an extensive compendium of education data. The 1985-86 edition was released in September 1986.

Development of education indicators predates the current reform movement. The Department of Education began a collaborative effort in 1982 with representatives from a large number of education associations who expressed an interest in making data collected by the Center and by other statistical organizations more accessible to the layperson and to key decisionmakers in schools and in government. Work began on identifying what constituted an education indicator and what items of information with relevance to schools would meet the definitional test. The definition that emerged from these deliberations follows. An "education indicator":

- consists of statistically valid information related to significant aspects of the educational system and can be a single valued statistic or a composite index;
- provides a benchmark for measuring progress or regression over time, or differences across geographical areas or institutions at one point in time, such that substantive inferences can be drawn from presentation of the data;
- is meant, where appropriate, to be representative of policy issues or aspects of education that might be altered by policy decisions;
- can be easily understood by the broad audience concerned with education; and
- is the result of relatively reliable data and not subject to significant modification as the result of response errors or changes in the personnel generating it.

In 1983, general discontent with the country's schools was forged into a national reform movement through the publication of a number of widely circulated reports identifying problems in the schools and proposing remedies. Probably the best-known report was *A Nation at Risk*, issued by the National Commission on Excellence in Education. Authoritative analyses and prescriptions for reform are still being issued even as earlier recommendations are translated into legislative initiatives, increased State appropriations for education, and local school reform projects. The most recent contributions to the reform literature include *A Nation Prepared*, sponsored by the Carnegie Corporation of New York which contains recommendations for transforming the American teaching profession; *Time for Results*, the 5-year plan for educational reform prepared by the National Governors' Association; and Secretary Bennett's report on elementary schools, *First Lessons*.

In January 1984, the Secretary of Education issued a State education statistics chart that provided State data and State rankings on a number of education variables. The Secretary's action caught the attention of the press and led to a lively debate.

In this favorable climate the Department of Education continued to pursue the identification and development of education indicators. While desirable at any time, it is especially important to have indicators available in a period of reform so that the nature of the issues can be better defined and clarified. As the impact of reform is felt, the indicators should help gauge the changes.

In the Department's 1985 publication, *Indicators of Education Status and Trends*, 20 indicators were described. They addressed the *outcomes* of education, such as test score results; the *resources* available for education, like per pupil expenditures and teacher salaries; and the *context* in which education takes place, that is, environmental factors, including student characteristics, public opinion about the schools, and legislative action on school standards. Reception of this publication was so favorable that it was decided to model the next *Condition of Education* edition on it, and to also include papers on topical subjects.

The 1986 edition of *The Condition of Education* moves considerably beyond the earlier indicator publication and features some 45 measures of education grouped within this framework of *outcomes*, *resources*, and *context*. While the majority still address aspects of elementary and secondary education, there are 10 indicators that describe postsecondary education. Five issue papers follow the indicator section, covering topics ranging from preschool enrollment to high school dropouts.

Economic indicators have been part of the American scene since the 1940's. Social indicators, including education indicators, are more elusive to define and establish, but the interest is there, especially in reform eras such as the present. While the National Science Foundation has published *Science Indicators* for the last 20 years, the recent initiative by the Department of Education is probably the first systematic attempt to identify and describe broad education indicators. It will not be the last.

In conducting this work, it became evident that despite the volumes of education data produced each year, important information is lacking—information directly relevant to reform agendas, such as definitive data on teacher supply and demand and indices of teacher quality. Major new surveys underway and the planned redesign of existing surveys in the Center for Statistics will help to correct such deficiencies.

Especially for this edition of *The Condition of Education*, comprehensive data on which to build indicators of private education are sorely lacking. In 1983 the Center for Statistics began a new series of surveys on private schools. Most of the findings of the 1983 survey have been reported in the 1985 *Condition of Education* and in Bulletins released or in final preparation by the Center this year. The results of the just completed 1985 survey were not available for this edition; however, they will be presented in next year's report. Based on the new data, Center staff will be able to present a comprehensive picture of changes in private education since 1983 as well as draw more comparisons between public and private education than has been possible in the past. These improvements in the content and scope of the Center's data gathering efforts should result in more comprehensive education indicators in the near future.

1. Indicators of Elementary and Secondary School Education

Elementary and Secondary Education Indicators

Outcomes

The most direct measures of the effectiveness of our country's educational system are the outcomes of schooling. These would include assessments of student performance, the rigor of a course of study, the extent of school completion, and the ability of post-high school youth to function in a variety of roles in the broader society. While currently available measures of those outcomes have their individual limitations as indicators of the quality of schooling, together they do suggest that the results of education in America give cause for concern.

Student performance: There does not exist in the United States a commonly accepted and widely applied test of student achievement that can gauge definitively the performance of representative students in the various subject areas as they move through the elementary grades and high school. Therefore, it is necessary to use a variety of data sources that, taken together, can only approximate an ideal measure.

For elementary and secondary students, there are data from the Congressionally-mandated National Assessment of Educational Progress, results from the Second International Mathematics Study, and scores on the Scholastic Aptitude Test and the American College Testing Program. Performance on these tests shows the extent to which considerable progress needs to be made by American students at all levels in the range of academic skills and disciplines.

The National Assessment of Educational Progress (NAEP), carried out under a grant from the U.S. Department of Education's Office of Educational Research and Improvement, was conceived in the mid-1960's as a means of measuring the knowledge, skills, and attitudes of 9-, 13-, and 17-year-olds and young adults. In the course of the 17 years since it was created, NAEP has completed four assessments of reading and three assessments of math and science. A fourth assessment of science was conducted in 1981-82 by the Science Assessments and Research Project using NAEP test questions. The assessments have produced valuable information on the academic progress of students in the three age groups examined. Findings point to areas of weakness that call for the attention of parents, teachers, curriculum specialists, and policymakers.

In reading, students are doing better than they did 13 years ago (Indicator 1:1). This is especially true of minority students (Indicator 1:2). While black and Hispanic minority students have made considerable strides in closing the performance gap with their white peers, white students' scores remain considerably higher.

The last assessments in mathematics and science for which data are available were given in school year 1981-82 and show trends for a decade. Additional assessments in mathematics and science were administered in 1985-86, but the data have not yet been analyzed. Though the data presented are relatively old, they are included because of the importance these subjects have for the success of future generations in a changing world economy. Results are reported in terms of mean score changes from test to test. In math, only 13-year-old students showed any improvement, while performance in science declined for all groups tested (Indicator 1:3).

NAEP is a major contribution to an understanding of the academic performance of American students nationally. However, NAEP in its present form does not permit State-by-State comparisons, nor are achievement scales available for all subjects. The feasibility of modifying the test instrument to allow comparisons is under review by the NAEP grantee, the Educational Testing Service, and has been endorsed in principle by the Council of Chief State School Officers.

While NAEP compares performance over time, there is information for mathematics that allows comparisons of U.S. students and their counterparts in other countries. During the 1981-82 school year, the Second International Mathematics Study achievement tests were administered to 8th and 12th graders in a number of countries by the International Association for Evaluation of Educational Achievement (IEA). The nationally representative sample of U.S. students included 13,500 students from 600 classrooms. Indicator 1:4 describes how U.S students fell below the mean scores of students from other developed countries on all tests at both grade levels. The major problems associated with the IEA-sponsored studies are the length of time between tests (the first study was conducted in 1969) and the slowness with which data are analyzed and released due to complications of translation and international protocol. Moreover, some countries for which one would like comparisons do not participate, e.g., West Germany and the Soviet Union.

Students aspiring to continue their schooling beyond high school generally take either the Scholastic Aptitude Test (SAT) or the American College Testing Program tests (ACT) as part of the college application process. Although students taking these tests are not a representative sample of all American students—they are college-bound students in the upper secondary grade levels who have elected to take them—the national college entrance examination scores are used each year by the media and education analysts as a major barometer of educational effectiveness. Indicator 1:5 portrays the widely reported decline and recent modest rebound in these scores. Indicator 1:6 depicts the corresponding trends for high-scoring youth.

In addition to the limitations already noted, the percentage of students taking the ACT and SAT varies across States. It has been suggested that there is an inverse relationship between average scores per State and the proportion of students who take these tests. And of course, there is a major debate over what the tests measure—aptitude or achievement. The sponsoring agency, the College Entrance Examination Board, says that the SAT measures "developed ability."

The use of test scores as indicators of student performance presents only a part, albeit a major part, of the outcomes story. It may be complemented by looking at what students have studied so that inferences can be made about the rigor of the course of study. In the last 3 years, declines in performance have been noted by a number of panels and blue ribbon commissions. President Reagan's National Commission on Excellence in Education, which focused on secondary schools, stated that much of the decline was caused by a curriculum that had become "diluted and diffuse." In their 1983 report, *A Nation at Risk*, the Commission recommended that to remedy the deteriorating situation, all high school students be required, at minimum, to complete the "New Basics"—4 years of English, 3 years each of science, mathematics, and social studies, and a half-year of computer science. Two years of foreign language also were recommended for students going on to college. Indicator 1:7 is a general gauge for examining where the country stands in relation to this requirement. It contrasts these recommendations with the courses actually taken by students in the high school class of 1982.

Transitions: Aside from the critical issue of courses taken, a major measure of the system's ability to address the needs of today's youth is the extent to which students complete their education and graduate from high school. Society generally expects students to complete their secondary school education by the age of 18 or 19. Indicator 1:8 shows that in 1985, nearly 75 percent of the Nation's 18- to 19-year-olds had obtained a diploma—an improvement over the low (during the 1975-85 decade) of 72 percent in 1982. When completion rates for youth 20-24 are examined, we find the proportion of that group completing school is significantly higher. Students who have not finished school by the modal age of 18-19 do go on in large numbers either to complete regular day school or to obtain other high school credentials. The proportion of black youth obtaining a high school diploma or its equivalent, while below that of whites, has increased since the mid-1970's, especially in the 20- to 24-year-old age group.

Still, this apparently direct indicator is not without its limitations. There are definitional problems in trying to assess graduation rates and, more particularly, in developing a methodology to measure the dropout rate. See Pallas (1986) for a detailed discussion of this issue.

A critical outcome of schooling is how well post-high school youth make the transition to work or to further education. Indicator 1:9 compares the activities reported in longitudinal studies of the high school class of 1972 and the high school class of 1980. It describes the proportion working, enrolled in school, or engaged in other activities during the first, second, third, and fourth years out of high school. A key finding is that a larger proportion of the class of 1980, in particular those attending 4-year schools, combined work and study.

There is a major concern about the ext[illegible] of adult literacy in this country and how illiteracy may be defined and measured. In 1985, NAEP assessed the literacy skills of the young adult population aged 21 to 25. Indicator 1:10 shows their skills by educational attainment.

Another measure of the ability of high school graduates to function in society is the extent to which students who attend college are indeed able to do college work. The Center for Statistics surveyed a nationally representative sample of 2- and 4-year colleges that enrolled freshmen for school year 1983-84 to assess the prevalence of remedial courses. Over 80 percent of the institutions of higher education offered such courses, particularly in mathematics, but also in reading and writing. Further details may be found in Indicator 1:11. Ideally, indicators should show trend data. The indicator on postsecondary education remediation resulted from a one-time survey. The Center will update this information in about 2 years.

There are two vital sectors of American education, public and private. Indicator 1:12 compares postsecondary enrollment and completion rates for 1980 graduates of private and public high schools. Private school graduates are more likely to continue their education beyond high school than are public school graduates.

Resources

While a cause and effect relationship between education outcomes and resources has not been unambiguously established, clearly certain tools are needed to accomplish any job. The education indicators shown in this volume include some that describe certain aspects of fiscal support and others that depict a range of information on teachers— the most central human resource in the education enterprise.

Fiscal resources: Financial support for public education is provided from local, State, and Federal taxes. These funds are allocated to the schools through a variety of mechanisms and formulas peculiar to the legislation involved and to each State and district. Equity in resource distribution emerged as a major issue in the 1960's. Research evidence establishing direct causal relationships between student achievement and expenditures is mixed. Nevertheless, because resource allocation can be altered by policy decisions, resources are an aspect of the education system that commands the attention of elected officials, school administrators, and the public.

Obtaining a fully satisfactory indicator of financial support for education is difficult because there are so many variations among States (and districts) in terms of need, wealth, and demands for other governmental services. Three perspectives on fiscal resources are presented: expenditures per pupil; trends in public school revenues; and an index of public school finance in relation to population.

Data on per pupil expenditures (Indicator 1:13) show considerable growth in the last 10-15 years both in terms of current and constant dollars. Even controlling for inflation, expenditures rose by over 50 percent since school year 1969-70. School revenue sources are displayed in Indicator 1:14, which shows how these sources have changed since 1920. That year, localities covered over 80 percent of their educational costs. The proportion declined steadily until the late 1970's when an historic shift occurred and localities' share fell below that provided by the States. The final fiscal indicator (1:15) presents the level of public education revenues in relation to income, taking into account public school enrollment. The resulting "index" shows a dramatic rise in the national investment in education over time.

While each of these measures is limited and certainly cannot address the question of what quality of education is being provided, the indicators support the notion that financial support for education in America has grown steadily in this century.

Human resources: Following initial attention to graduation standards and compensation based on teacher merit during the last 2 years public debate has given greater attention to issues of teacher characteristics, preparation, recruitment, and working conditions. The recent Carnegie report, *A Nation Prepared,* has further focused national consideration on teacher-related issues. This human resources indicator section addresses several aspects of concern about teachers today: their number, their pay, and their quality.

A number of issues surround the question of teacher supply. One is whether the number of teachers in the classroom is in the proper proportion to supervisory staff. Indicator 1:16 shows that while the numbers in all categories of instructional staff rose steadily from 1970 through the decade, the ratio of classroom teachers to supervisory staff declined only slightly during the period, standing at 16.5:1 at the beginning of the period and 15.7:1 at the end.

A measure of the burden on the teacher is the number of students he or she must teach. This may be measured in two ways. "Class size" refers to the numbers of students teachers have in their classrooms. The "pupil/teacher" ratio reflects all enrolled pupils and the total full-time-equivalent teaching staff for the Nation as a whole. It would include instructional staff who do not have regular classroom assignments, such as art and music teachers. Since there are no current data on class size, the indicator is shown in terms of pupil/teacher ratio, i.e., the number of pupils to the number of teachers. Indicator 1:17 portrays how the ratio is estimated to have improved from 26:1 in 1960 to 18.3:1 last year.

There is a major concern in the country that a teacher shortage is looming. Spot shortages are already occurring, but the national scope cannot be predicted with any confidence, because today there are insufficient data. Teacher supplies have always been maintained with entrants each year that included new college graduates, but the majority of vacancies have been filled not only by individuals returning to teaching but also by professionals from other fields and by retirees. In only a year or two, the numbers of potential recruits could rise substantially if teaching were perceived more favorably (due to rising salary levels, changes in economic conditions, the professional status of new jobs, etc.) by people in the pool of college graduates, professionals, returnees, and retirees. On the other hand, if public attitudes and school employment practices are not perceived by individuals in these pools of potential teachers as favorable, then existing spot shortages could develop into a problem of greater scope. (See Indicators 1:18 and 1:19.)

Reformers have long argued that the quality of American teachers is less than desirable if the Nation is to prepare a citizenry competent to thrive in the postindustrial age, but teacher quality measures are indirect at best. One such measure is cognitive test data for graduates of the high school class of 1972, which show that mean scores for all college graduates were markedly higher than for those entering teaching (Indicator 1:20). Scores for those who remained teachers and those who left teaching were not significantly different early in their careers.

Reformers also argue that to attract a better quality of teaching personnel it is essential that pay scales be raised substantially. From the early 1970's to the early 1980's, teacher salaries failed to keep pace with inflation. Only in 1981-1982 did salaries begin to show some renewed vigor. Since then teacher salaries have been increasing faster than inflation and faster than the earnings of all college graduates. In 1985-86, the average salary for teachers measured in constant dollars finally returned to and even surpassed 1969-70 in purchasing power (Indicator 1:21).

But to fully assess the adequacy of teacher pay, it is important to compare the income of teachers with that of other individuals. In 1984, Census data show teachers' annual earnings were above the average for all workers and less than the average for professionals (Indicator 1:22). Teachers are generally salaried for a 9- or 10-month contract. It is not known to what extent their salaries may be supplemented by other work to arrive at the reported annual earnings figure. Surveys planned by the Center for the near future should help clarify the issue of teacher income.

Context

In conducting classes or in making resource allocations for schools, teachers and decisionmakers need to consider many factors. These include such tangibles as the kinds of students attending schools and such intangibles as aspects of the environment that promote or inhibit learning, teachers' attitudes, and public perceptions of the schools' function and performance. Another important aspect of the context is the role of various levels of government. In the current reform movement, the States have moved to the forefront and have enacted measures that directly affect students and local school districts. A discussion follows of selected contextual indicators.

Student characteristics: While nearly all children within the range of compulsory attendance are enrolled in school, of special note are the proportions enrolled at the lower and upper age ranges. Indicator 1:23 presents enrollment trends for these populations subgroups: 3- to 4-year-olds, 5- to 6-year-olds, and 16- to 17-year-olds. The increase in attendance rates by younger children signifies a major societal change. For older school-age youth, a key question is whether high enrollment rates will be maintained as schools begin to implement rigorous academic reforms. Section II of this report addresses the related topics of enrollment trends, student composition, and dropouts in some detail.

America is a mobile society and that mobility impacts upon the movement of students from State to State. An analysis of Census data (Indicator 1:24) shows that in over 60 percent of the States, 10 percent or more of the children ages 5 to 14 has come from out-of-State within the last 5 years. In 15 States (11 of them in the West), the degree of interstate mobility exceeded 15 percent.

Learning environment: While schools must deal with shifting populations of students, other environmental challenges are present as well, some of them in the home and some in the schools. NAEP data has revealed that in recent years there has been an increase in the amount of television children watch. At the same time, the amount of reading material in homes has declined. Indicator 1:25 displays data showing a strong relationship between limited television viewing, considerable reading materials, and high reading scores.

While the home environment can help or hinder the learning process as measured by such things as reading scores, the school environment itself is central. Four indicators describing different aspects of today's school environment have been selected. Indicator 1:26 provides the results of a recent survey of school principals on the occurrence of law violations on school grounds. A particularly troubling aspect of student crime is substance abuse.

Indicator 1:27 presents data on a decade-long study measuring the prevalence of student drug and alcohol abuse. A special analysis based on the effective schools research paradigm has resulted in an indicator of school climate. Using original scales of teachers' perceptions of such variables as principal leadership and orderly environment, Indicator 1:28 compares school climate in public and Catholic high schools. Finally, the satisfaction that teachers have with their jobs is presented in Indicator 1:29.

The results of these four indicators are somewhat mixed. Principals report a considerable level of law violations, particularly in large schools. Substance abuse by high school students, while down from the peak years in the 1970's, remains extremely high. Catholic teachers more frequently assessed school climate in their schools positively than did public school teachers. The widest disparity was in the perception of student behavior, which public school teachers ranked lowest of all school climate indices. As for teacher satisfaction, nearly half were very satisfied with teaching as a career in 1985. A year earlier a similar proportion felt they were respected as a teacher in today's society.

Collectively, these context indicators provide major insights into aspects of school environments. But because some of these indicators are one-time studies and no trends will be documented, their long-term value is limited. The challenge remains to translate the information on effective schools and other school environment research into clear and direct indicators.

Perceptions: Another set of context indicators focuses on perceptions about the schools. Two of these contrast the perspective of the public with that of teachers. Indicator 1:30 shows the degree to which the public and the teachers share views about the goals of education while the next indicator (1:31) contrasts their respective perceptions of the problems facing the schools. While there are few extreme disparities, those that do exist may suggest the need for greater dialogue between parents and teachers. For example, the public puts a higher value on job-oriented education than teachers. As for problems, over a third of the teachers complained about the lack of parental support, while a mere 5 percent of the public identified lack of such support as a major problem. The remaining indicator (1:32) in this set shows trends in the public's assessment of the schools and other major public institutions.

State governance: Education and decisions about education take place in many contexts: societal, fiscal, and political. The final group of indicators of elementary and secondary education present aspects of the increasing role of the States in today's reform era. Indicator 1:7 portrayed the shortfall in Carnegie units in the New Basics for the Class of 1982. Indicator 1:33 shows the extent to which States since 1983 have been addressing this problem by increasing graduation requirements and demanding more units be taken in language arts, mathematics, social studies, and science.

Similarly, Indicator 1:34 plots the trend in the use by the States of competency testing for high school graduation. The concluding indicator for elementary and secondary education (1:35) shows how competency testing is being applied to teachers as well as to students. Passing a competency test as a condition for teacher certification has been adopted by an increasing number of States.

Conclusion

The 1985 Department of Education publication, *Indicators of Education Status and Trends*, produced 20 indicators, 19 of them on elementary- and secondary-level schooling. This volume expands the list of elementary and secondary education indicators to 35. A number of data sources have been used and every attempt has been made to employ the most current information available and to show trend data. However, as is readily apparent, there are number of instances where the data are several years old or where onetime surveys have been employed. These should be seen as previews of better data that the Center for Statistics hopes to acquire in the future. Indicator identification and development is a long-term undertaking. For education indicators, the task has only just begun.

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05

Reading performance of 9-, 13-, and 17-year-old students

The National Assessment of Educational Progress (NAEP) was established by Congress in 1969 for the purpose of conducting periodic assessments of knowledge, skills, and attitudes of the Nation's children and youth in various subject areas. Different learning areas were assessed annually beginning in 1969-70 and as of 1980-81, biennially. Each area is periodically reassessed in order to measure change in educational achievement. NAEP supplies the most complete and representative data available to measure what students in the United States know and can do.

NAEP has assessed the reading achievement of 9-, 13-, and 17-year-old students five times: in the school years 1970-71, 1974-75, 1979-80, 1983-84, and lastly in 1985-86. Data from the 1985-86 assessment have not yet been released. In each assessment NAEP has asked students to read prose passages or poems and answer questions about them. The passages are drawn from fiction and nonfiction.

Beginning with the 1983-84 reading assessment, item response theory (IRT) was used to estimate proficiency levels at the national level and for various subgroups. The main purpose of the IRT analysis is to provide a common scale on which performance can be compared across age groups and other subgroups whether tested at the same time or a number of years apart. The reading proficiency scale levels reported here are as follows:

Rudimentary (150) The ability to carry out simple, discrete reading tasks.

Basic (200) The ability to understand specific or sequentially related information.

Intermediate (250) The ability to search for specific information, interrelate ideas, and make generalizations.

Adept (300) The ability to find, understand, summarize, and explain relatively complicated information.

Advanced (350) The ability to synthesize and learn from specialized reading materials.

See Table A1 for further details by sex, region, parental education, type of community, reading material in the home, and television watched per day. Two additional indicators of reading proficiency are included: for racial/ethnic groups (Indicator 1:2) and by reading materials in the home and time spent watching television (Indicator 1:25).

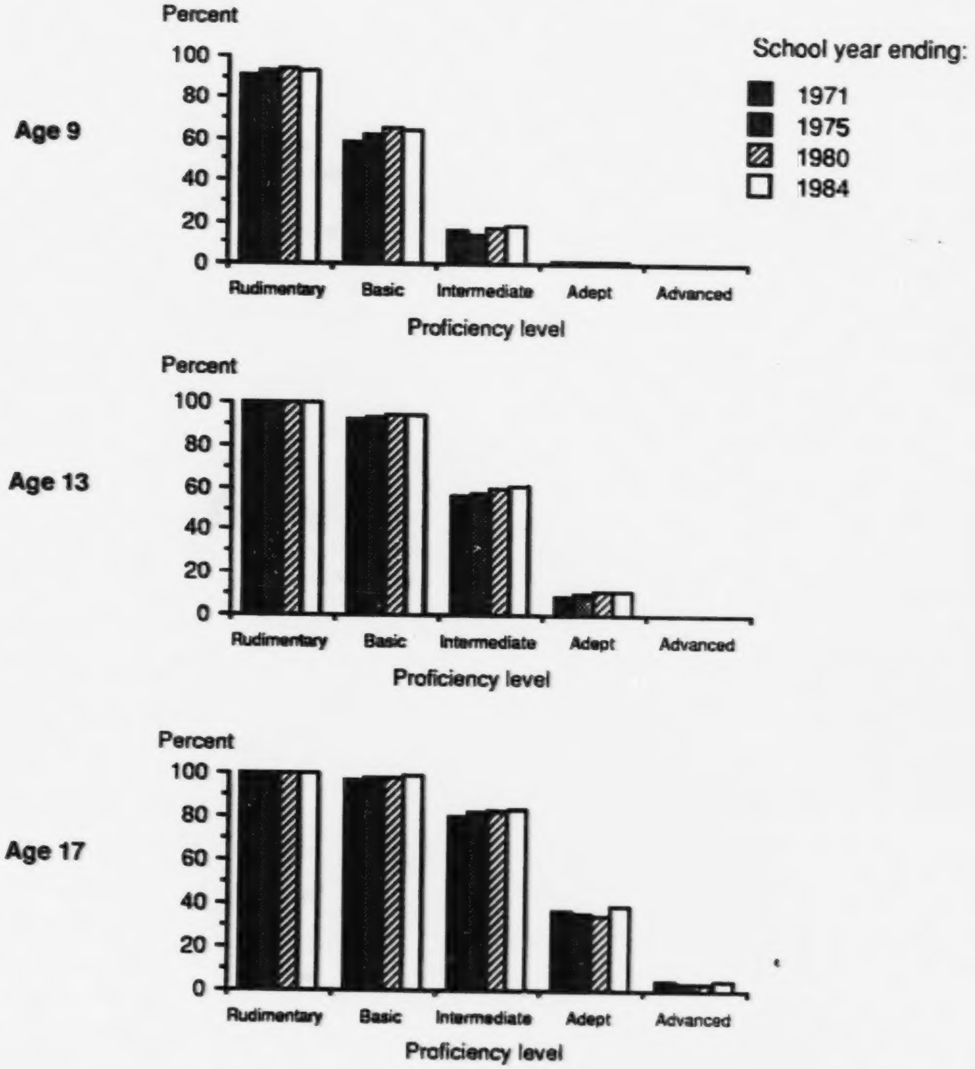
Table 1:1

Percentage of 9-, 13-, and 17-year-old students at or above the five reading proficiency levels: 1971 to 1984

		1971	1975	1980	1984
Reading level	Age	Percent			
Rudimentary (150)	9	90.4	93.3	94.4	93.9
	13	99.7	99.6	99.8	99.8
	17	99.7	99.9	99.9	100.0
Basic (200)	9	[illegible]	61.7	65.1	64.2
	13	92.3	92.8	94.3	94.5
	17	96.6	97.5	97.9	98.6
Intermediate (250)	9	15.6	14.0	17.0	18.1
	13	57.0	57.5	59.3	60.3
	17	80.0	82.0	82.8	83.6
Adept (300)	9	1.1	0.7	0.8	1.0
	13	9.3	9.7	10.9	11.3
	17	37.2	36.1	34.8	39.2
Advanced (350)	9	0.0	0.0	0.0	0.0
	13	0.2	0.2	0.3	0.3
	17	4.9	3.5	3.1	4.9

SOURCE: National Assessment of Educational Progress. *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report No. 15-R-01), 1985.

CHART 1:1 -- **Trends in reading proficiency level of 9-, 13-, and 17-year-old students**



SOURCE: National Assessment of Educational Progress, 1985.

- Students at ages 9, 13, and 17 were reading better in 1984 than they were in 1971. Nine- and 13-year-olds improved through the 1970's and 17-year-olds improved between 1980 and 1984. The recent improvements by 17-year-olds may in part reflect earlier improvements at ages 9 and 13.

- Six percent of 9-year-olds in 1984 could not do rudimentary reading exercises and were in danger of future school failure. Forty percent of 13-year-old students and 16 percent of 17-year-old students had not acquired intermediate reading skills, and may have had difficulty reading the range of academic material they encountered in school.

- The majority (61 percent) of 17-year-old students are unable to perform at the adept level, and few (5 percent) have advanced reading skills.

A. Outcomes: Student Performance

Reading performance by race and ethnicity of 9-, 13-, and 17-year-old students

The reading proficiency of American school children has been improving since 1971. But the Nation's population is diverse, and some groups have attained higher educational achievement than others. The National Assessment of Educational Progress (NAEP) has reported achievement by race (for blacks and whites) for all four assessments of reading, and for Hispanic students for three of the four assessments. It should be stressed that the averages presented here do not reflect the range of proficiency demonstrated by any group and that the distributions of proficiency overlap considerably for racial and ethnic groups.

Changes in the average reading proficiency scores shown in Table 1:2 summarize changes in the percentage of students at each reading proficiency level. For example, improvement in the average reading proficiency of black 9-year-olds resulted from a considerable reduction in the proportion that had not yet acquired *rudimentary* reading skills (from 30 percent in 1971 to 16 percent in 1984); at the same time the proportion reading at or above the *basic* level almost doubled (from 22 percent to 39 percent). The percentage of black 17-year-olds with *adept* reading skills more than doubled. However, even in 1984, only 16 percent of black 17-year-olds demonstrated *adept* reading skills compared to 45 percent of white students at this age.

The English reading proficiency level of Hispanic students also rose over this time period, but not as dramatically as that of black students.

In all four assessments, white students performed considerably better than their black and Hispanic peers. By age 17, 89 percent of white students had acquired *intermediate* reading skills compared with 66 percent of blacks and 69 percent of Hispanics. Unlike the upward trends in the other groups, however, there were only modest improvements in the reading skills of white students between 1971 and 1984.

Table 1:2

Average reading proficiency of white, black, and Hispanic students: 1971 to 1984

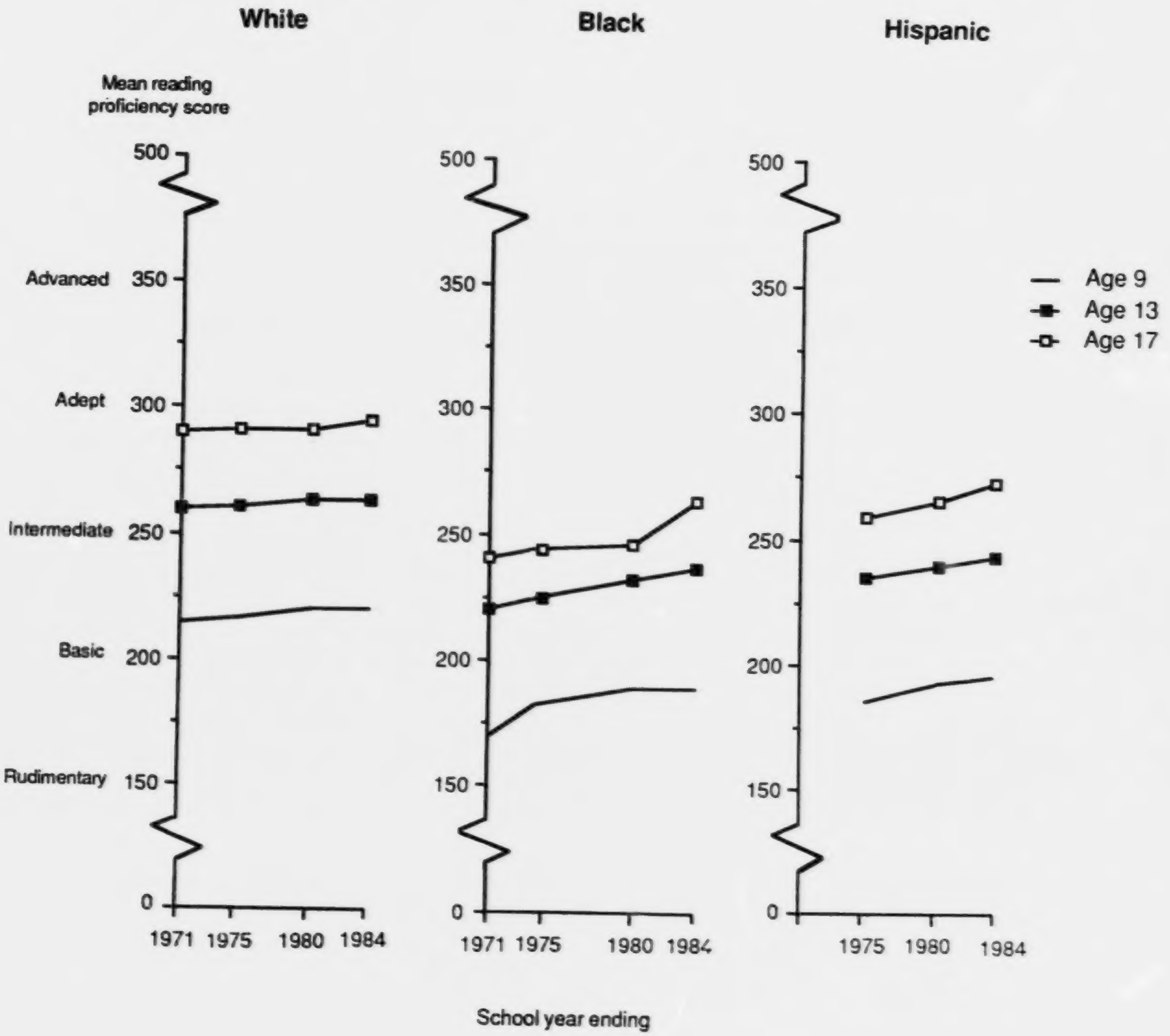
Age and race/ethnicity	Level	1971	1975	1980	1984
		Reading proficiency means			
Age 9					
White	Basic	214.4	215.9	219.7	220.1
Black	Rudimentary	169.3	181.9	188.9	188.4
Hispanic	Rudimentary	—	182.9	189.1	193.0
Age 13					
White	Intermediate	260.1	260.9	263.1	263.4
Black	Basic	220.3	224.4	231.9	236.8
Hispanic	Basic	—	231.1	236.0	239.2
Age 17					
White	Intermediate	290.4	290.7	291.0	294.6
Black	Basic to Intermediate	240.6	244.0	246.1	263.5
Hispanic	Intermediate	—	254.7	261.7	268.7

—Hispanic students are included in "white" in 1971.

NOTE: For all four reading assessments, results are based on observed racial and ethnic identifications made by assessment administrators unacquainted with the students. Asian and American Indian students were omitted in the reports of trends in reading proficiency by race and ethnicity because of the extremely small sample of those students. Estimates for Hispanics should be interpreted with caution: standard errors are poorly estimated due to small sample size.

SOURCE: National Assessment of Educational Progress. *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report No 15-R-01). 1985.

CHART 1:2 -- **Trends in reading proficiency of white, black, and Hispanic students**



SOURCE: National Assessment of Educational Progress, 1985.

- There have been marked improvements in the reading achievement of minority students during the period, reducing the gap between their performance and that of white students.
- In spite of the gains, the average reading proficiency of black and Hispanic students is quite low and in need of further improvement. For example, the average reading proficiency of black and Hispanic 17-year-olds is similar to that of white 13-year-olds.

A. Outcomes: Student Performance

Mathematics and science performance of 9-, 13-, and 17-year-old students

The National Assessment of Educational Progress conducted assessments of the mathematics achievement of 9-, 13-, and 17-year-old students in the 1972-73, 1977-78, and 1981-82 school years. The mathematics assessments were designed to measure students' attitudes toward mathematics and their abilities in various content areas such as numbers and numeration, variables and relationships, geometry, measurement, probability and statistics, graphs and tables, and technology (including the use of calculators and computers).

Science assessments were conducted by NAEP in 1969-70, 1972-73, and 1976-77.* The National Science Foundation sponsored an additional science assessment in 1981-82 using test items from the NAEP pool. In each science assessment, students were administered a variety of questions designed to assess achievement in biological, physical, and earth sciences. Three broad objectives of science education were tested: (1) knowledge of the fundamental aspects of science, (2) understanding and applying these fundamental aspects of science in a wide range of problem situations, and (3) appreciation of the knowledge and processes of science, the consequences and limitations of science, and the personal and social relevance of science and technology.

Performance on the NAEP mathematics and science assessments is reported as the mean percentage of correct responses for each assessment. Since the test items in each assessment differ, the reported change in percentage of correct responses from one assessment to the next is based only on student responses to those items common to successive assessments. Both the number and content of the items common to successive assessments varies.

See Table A2 for details on mathematics performance by race and ethnicity, sex, region, and type of community.

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*Assessments of mathematics and science were conducted by NAEP during the 1985-86 school year, but the data have not yet been released.

Table 1:3

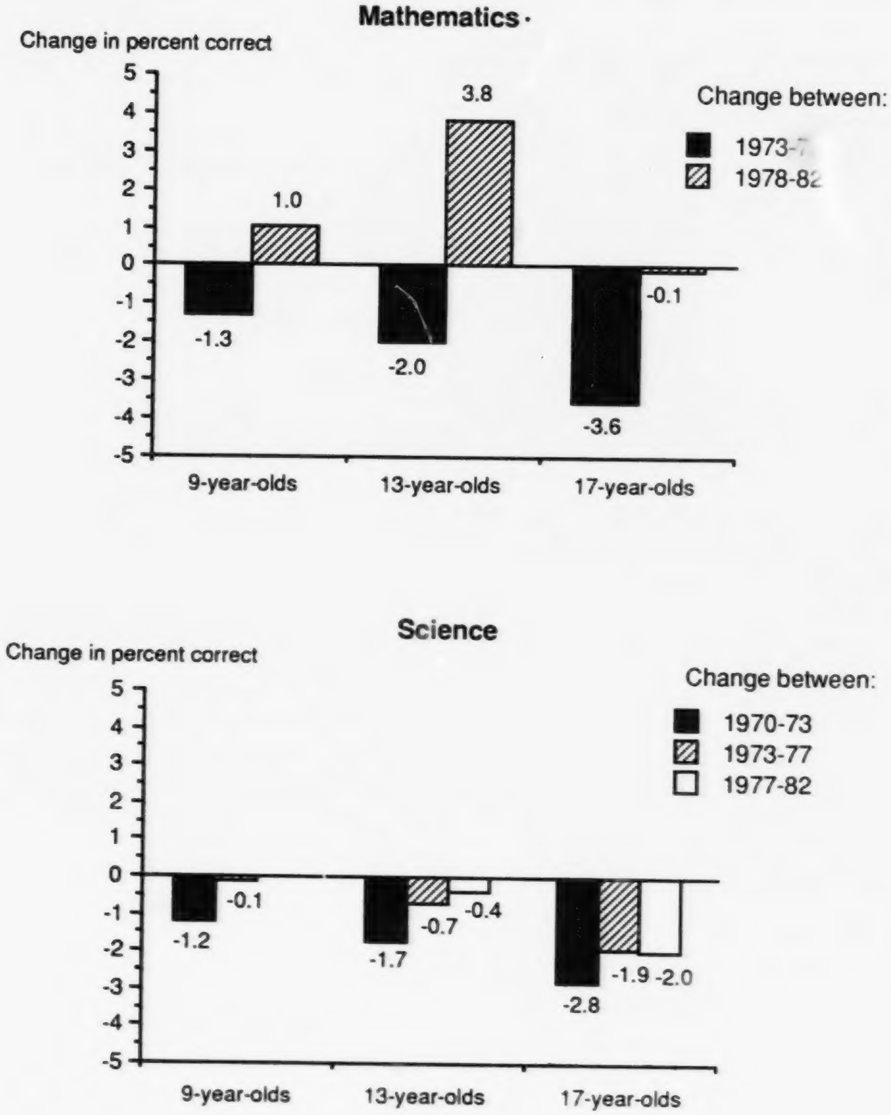
Average mathematics and science performance of 9-, 13-, and 17-year-olds: 1970 to 1982

Age and subject	Mean percent of correct responses								
Mathematics	1973	1978	Change	1978	1982	Change			
9	38.1	36.8	−1.3	55.4	56.4	1.0			
13	52.6	50.6	−2.0	56.7	60.5	3.8			
17	51.7	48.1	−3.6	60.3	60.2	−0.1			
Science	1970	1973	Change	1973	1977	Change	1977	1982	Change
9	61.0	59.8	−1.2	52.3	52.2	−0.1	—	—	—
13	60.2	58.5	−1.7	54.5	53.8	−0.7	52.8	52.4	−0.4
17	45.2	42.5	−2.8	48.4	46.5	−1.9	61.7	59.7	−2.0

—Data from the Science Assessment and Research Project for the 1982 science assessment are not included for 9-year-olds because change for total content items was not reported.

SOURCES: National Assessment of Educational Progress, *Mathematical Technical Report: Summary Volume*, 1980. National Assessment of Educational Progress, *The Third National Mathematics Assessment: Results, Trends and Issues* (Report No. 13-MA-01), 1983. National Assessment of Educational Progress, *Three National Assessments of Science: Changes in Achievement, 1969–77* (Report No. 08-S-00), 1978. For change data from 1977 to 1982: Science Assessment and Research Project, *Images of Science, A Summary of Results from the 1981–82 National Assessment in Science*, 1983.

CHART 1:3 -- Changes in mathematics and science performance of 9-, 13-, and 17-year-olds



SOURCES: National Assessment of Educational Progress and the Science Assessment and Research Project.

- From 1973 to 1982, mathematics performance was relatively stable for 9-year-olds, improved for 13-year-olds, and declined for 17-year-olds.
- During 1970 to 1982, science performance showed overall declines for all age groups.

International mathematics achievement of students in the 8th and 12th grades

While the NAEP mathematics test series allow comparisons over time of performance by American students in certain age groups, data also are available that provide international comparisons. Because educational progress both depends on and contributes to the economic progress of the Nation, monitoring U.S. scores relative to those of other countries is important.

In school year 1981-82, the Second International Mathematics Study was conducted under the auspices of the International Association for the Evaluation of Educational Achievement (IEA), an international network of leading educational research institutions. The tests were designed to determine the general course content of the mathematics curriculum in each country, how the math subjects were taught, and how well the students performed. Twenty-four developing and developed countries or provinces within those countries took part. The groups sampled were taken from (a) students enrolled in regular mathematics classes in the 8th grade or equivalent, and (b) students in advanced 12th grade classes, that is, those mathematics classes requiring as a prerequisite 2 years of algebra and 1 year of geometry.

The data below compare scores by subject for the United States, for participating developed countries combined, and for Japan, the highest scoring country. Without exception, the United States performance levels were below the international average and substantially below the performance levels of Japan.

Table 1:4A

Average percent correct on an international test of mathematics achievement for students in the 8th grade[1] or equivalent in participating developed countries: 1982

Country	Total	Arithmetic	Algebra	Geometry	Statistics	Measurement
	Average percent correct					
United States	46.0	51.4	42.1	37.8	57.7	40.8
International mean[2]	52.0	53.1	46.4	44.8	59.4	53.8
Japan	63.5	60.3	60.3	57.6	70.9	68.6

SOURCE: Livingstone, I.D. "Perceptions of the Intended and Implemented Mathematics Curriculum." A report of the Second International Mathematics Study prepared by the members of the International Association for the Evaluation of Educational Achievement for the U.S. Department of Education, Center for Statistics, June 1985.

Table 1:4B

Average achievement score on an international test in algebra and calculus taken by advanced mathematics students in the 12th grade or equivalent in participating developed countries: 1982

Country	Algebra	Calculus
	Average achievement score[3]	
United States	43.7	43.2
International mean[2]	49.0	48.6
Japan	57.1	57.6

[1] The grade for the analysis was defined as that grade in which a majority of students attained the age 13.00 to 13.11 by the middle of the school year. That grade was the 7th grade for Japan.

[2] See Tables A3a and A3b for test data for each of the 14 developed countries and provinces included in the international mean shown here: Belgium (Flemish and French), Canada (British Columbia and Ontario), England and Wales (combined), Finland, Hungary, Japan, New Zealand, Scotland, Sweden, and the United States. France and the Netherlands are included for 8th grade only.

[3] The score is based on an international test of 63 items in algebra and calculus with the score standardized for the participating countries.

SOURCE: Miller, D. and Linn, R.L., "Cross National Achievement with Differential Retention Rates," unpublished contractor report to the Center for Statistics, April, 1986, special tabulations.

CHART 1:4A -- **Performance by 8th grade[1] students on an international test in mathematics: 1982**

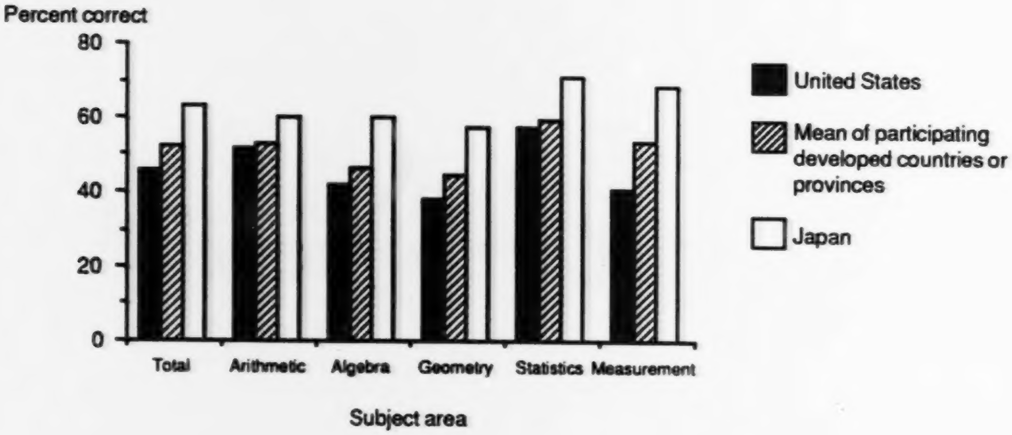
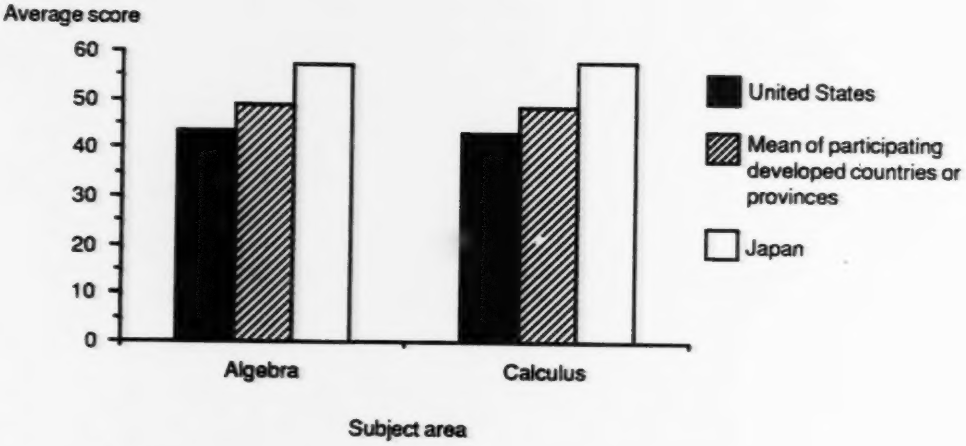


CHART 1:4B -- **Performance by advanced mathematics students in the 12th grade on international tests: 1982**



SOURCE : International Association for the Evaluation of Educational Achievement, Second International Mathematics Study, 1986 reports.

(1) The grade for analysis was defined as all students in that grade in which a majority attained the age 13.00 to 13.11 by the middle of the school year. That was the 7th grade in Japan.

- On all tests, U.S. mathematics performance lagged behind not only high scoring Japan, but also the average of all participating developed countries.

A. Outcomes: Student Performance

College entrance examination scores

Performance on college entrance tests is frequently used as a measure of our schools' effectiveness. The tests taken most frequently by college-bound students are the Scholastic Aptitude Test (SAT), and the American College Testing Program Assessment (ACT). These tests are designed explicitly to predict how well students might perform in college and are not intended as measures of the outcomes of elementary and secondary schooling. The SAT, for instance, is described as a test of "developed abilities," which is not linked to any specific high school curriculum. Care should be taken not to interpret performance on these tests as measures of what is learned in schools. College entrance examination scores by State are given in Table A4a.

College entrance examination tests are typically taken by juniors and seniors in high school who plan to apply for college admission. Students taking college entrance tests are not representative of all high school students; the scores reported here do not reflect the performance of the many high school students who are not planning to go to college.

Not all college-bound students take these tests, so the population of test-takers is not synonymous with the population of college-bound high school students. Nonetheless, as the characteristics of students planning to attend college have changed over time, the population of test-takers has changed too. In the latter part of the 1960's and early 1970's, the proportion of test-takers from traditionally lower-scoring groups, especially minority and disadvantaged youth, increased. The changing composition of the test-taking pool accounts for some, but by no means all, of the trends in college entrance scores reported.

Trends in college entrance examination scores are the outcome of a complex interplay of school, family, and societal factors. The Advisory Panel on the Scholastic Aptitude Test Score Decline suggested that the decline was partly due to schools' reduced emphasis on the mastery of verbal and mathematics skills, as reflected in curricular changes and the lowering of standards in schools.[1]

Trends in scores on the Preliminary Scholastic Aptitude Test (PSAT), taken by sophomores and juniors in preparation for the SAT, provide an interesting contrast to trends in scores on the SAT. Scores on the PSAT remained stable through the 1960's, but during the 1970's dropped parallel to the decline in scores on the SAT.[1] Table A4b shows PSAT scores by year.

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[1] Advisory Panel on the Scholastic Aptitude Test Score Decline, *On Further Examination*. New York: College Entrance Examination Board, 1977.

Table 1:5A

Scholastic Aptitude Test scores: School year ending 1963 to 1985

Year	Verbal	Mathematics	Total
	Test scores		
1963	478	502	980
1964	475	498	973
1965	473	496	969
1966	471	496	967
1967	466	492	958
1968	466	492	958
1969	463	493	956
1970	460	488	948
1971	455	488	943
1972	453	484	937
1973	445	481	926
1974	444	480	924
1975	434	472	906
1976	431	472	903
1977	429	470	899
1978	429	468	897
1979	427	467	894
1980	424	466	890
1981	424	466	890
1982	426	467	893
1983	425	468	893
1984	426	471	897
1985	431	475	906

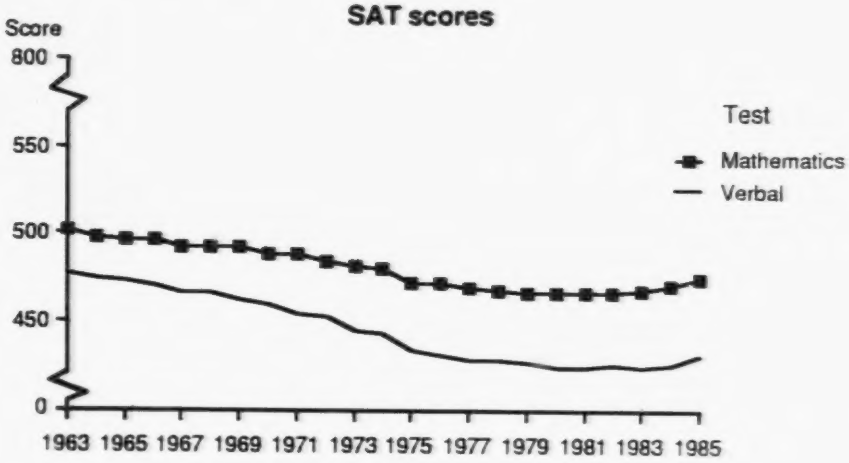
Table 1:5B

American College Testing scores: School year ending 1971 to 1985

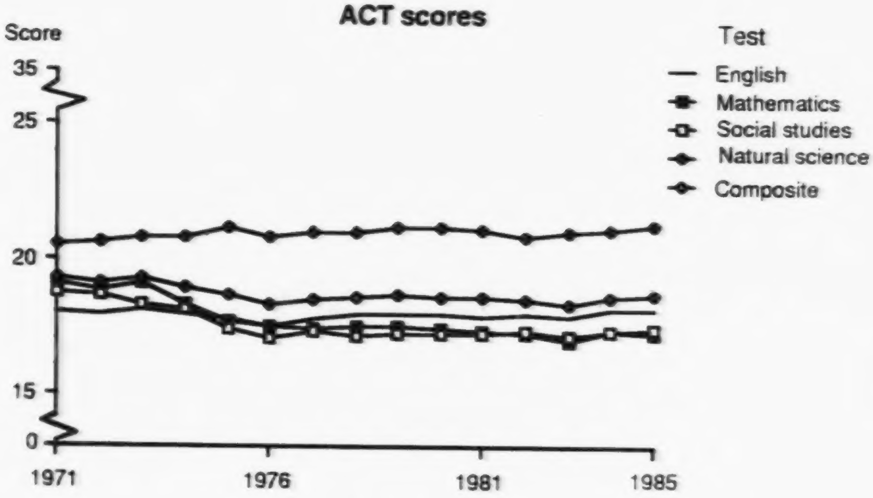
Year	English	Mathematics	Social studies	Natural sciences	Composite
	Test scores				
1971	18.0	19.1	18.7	20.5	19.2
1972	17.9	18.8	18.6	20.6	19.1
1973	18.1	19.1	18.3	20.8	19.2
1974	17.9	18.3	18.1	20.8	18.9
1975	17.7	17.6	17.4	21.1	18.6
1976	17.5	17.5	17.0	20.8	18.3
1977	17.7	17.4	17.3	20.9	18.4
1978	17.9	17.5	17.1	20.9	18.5
1979	17.9	17.5	17.2	21.1	18.6
1980	17.9	17.4	17.2	21.1	18.5
1981	17.8	17.3	17.2	21.0	18.5
1982	17.9	17.2	17.3	20.8	18.4
1983	17.8	16.9	17.1	20.9	18.3
1984	18.1	17.3	17.3	21.0	18.5
1985	18.1	17.2	17.4	21.2	18.6

SOURCES: College Entrance Examination Board, *National Report: College-Bound Seniors*, various years. The American College Testing Program, *The High School Profile Report, Normative Data*, various years.

CHART 1:5 -- **Trends in college entrance examination scores**



SOURCE: The College Board.



SOURCE: The American College Testing Program.

- SAT scores declined steadily from 1963 to 1980, but have increased since then. The increase from 1984 to 1985 of 9 points is the largest annual increase in recent years, and represents a recovery to 1975 levels.

- The composite ACT score declined somewhat from the early 1970's to the mid-1970's, but has not changed appreciably since 1974-75.

A. Outcomes: Student Performance

High school graduates scoring over 600 on the Scholastic Aptitude Test

The decline in Scholastic Aptitude Test (SAT) scores from the early 1960's through the 1970's is well known. Many explanations have been offered for this disturbing trend. The College Board's Advisory Panel on the Scholastic Aptitude Test Score Decline attributed most of the decline in the 1960's to changes in the population of test-takers. But only about one-quarter of the decline in the 1970's can be accounted for by a changing pool of test-takers, according to the Advisory Panel.[1]

There are a variety of ways to examine test score trends. One common way is to plot the average performance on a test over time, to see how the typical test-taker in 1982, for instance, scored relative to the typical test-taker in 1969.

Another way to study trends is to examine the proportion of highscoring students in the population. This figure may be less susceptible to fluctuations due to the changing pool of test-takers. If it can be assumed that the college chances of highly able students have not changed appreciably in the last 20 years, and that most academically talented high school students take the SAT (in those areas where it is the prevalent college entrance exam), then changes in the proportion of high-scoring students ought not be attributed to the changing pool of SAT examinees; explanations for the trends must lie elsewhere. The trends in the proportion of high school graduates scoring over 600 on the verbal and mathematics subtests are very similar to the overall trends in average performance on the SAT for the same period. The proportion of high scorers declined fairly steadily from 1972 until about 1981, but has increased since then.

The Advisory Panel concluded that declines in performance among high scorers represent the effects of pervasive influences that affected the scores of all types of SAT takers. These include shifts in high school curricula and standards away from academic rigor, the declining role of the family in education, and possibly the effects of increased television watching.[1] The recent upswing in scores may reflect a shift in some of these forces.

The percentage of high school graduates scoring 26 or above in the American College Testing Program is given in Table A5.

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[1] Advisory Panel on the Scholastic Aptitude Test Score Decline, *On Further Examination*. New York: College Entrance Examination Board, 1977.

Table 1:6

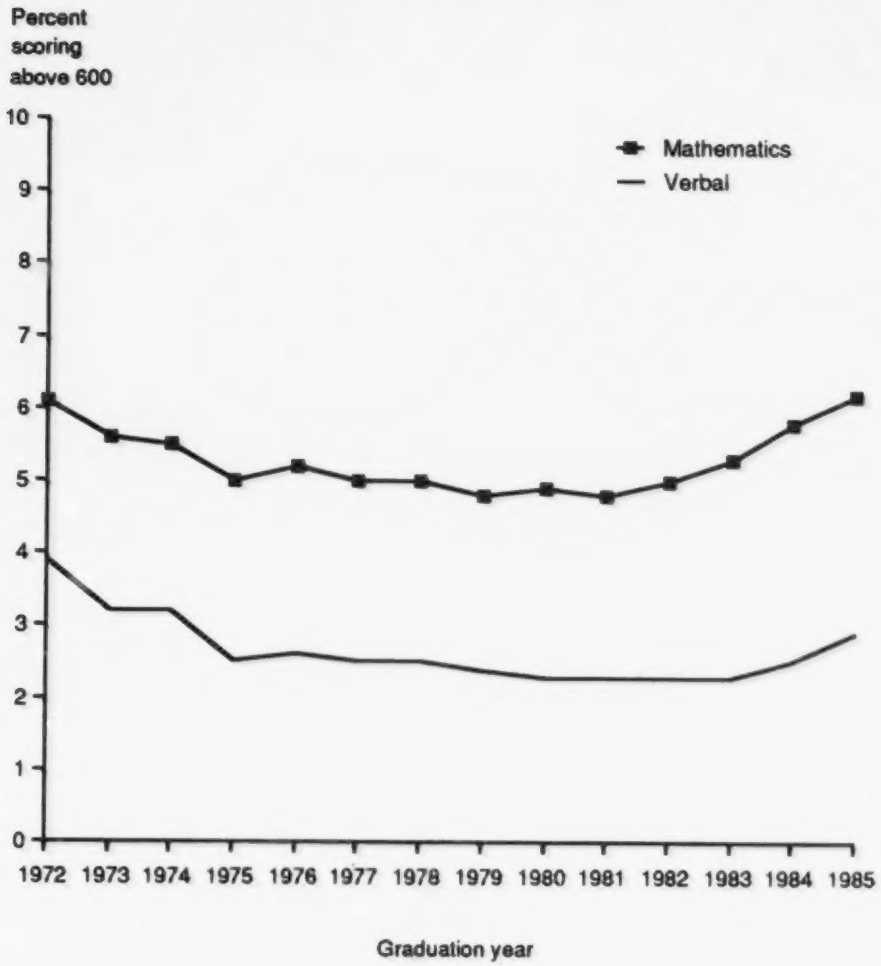
Percentage of high school graduates scoring above 600 on the SAT verbal and mathematics tests: 1972 to 1985

Graduation year	Number graduates (in thousands)	Verbal		Mathematics	
		Number	Percent	Number	Percent
1972	3,001	116,630	3.9	182,602	6.1
1973	3,036	98,256	3.2	169,029	5.6
1974	3,073	98,766	3.2	169,844	5.5
1975	3,133	79,133	2.5	155,516	5.0
1976	3,148	81,964	2.6	163,398	5.2
1977	3,155	78,342	2.5	157,466	5.0
1978	3,127	77,732	2.5	155,846	5.0
1979	3,117	76,261	2.4	149,021	4.8
1980	3,043	71,363	2.3	149,615	4.9
1981	3,020	69,612	2.3	143,566	4.8
1982	3,001	70,448	2.3	150,822	5.0
1983	2,888	66,292	2.3	153,344	5.3
1984	2,773	70,479	2.5	160,634	5.8
1985	[1]2,656	76,997	2.9	166,932	6.2

[1] Preliminary

SOURCES: College Entrance Examination Board, *National Report, College-Bound Seniors*, various years. Center for Statistics, *Digest of Education Statistics*, 1987 Edition, forthcoming.

CHART 1:6 -- Percentage of high school graduates scoring above 600 on the SAT verbal and mathematics tests



SOURCE: College Entrance Examination Board, National Report: College-Bound Seniors, various years, and the Digest of Education Statistics, 1987 edition, (forthcoming).

- The proportion of high school graduates with high SAT scores declined during the 1970's, and has risen in the 1980's.
- The trends for the proportion of high SAT scorers generally parallel the trends in average SAT performance for the same period.

A. OUTCOMES: STUDENT PERFORMANCE

"New Basics" credits earned by high school graduates

An examination of the courses taken by high school graduates tells us a great deal about what they might be expected to learn. The National Commission on Excellence in Education attributed the test score decline of the 1960's and 1970's to the movement away from a core high school curriculum composed of traditional academic subjects toward a curriculum that was "homogenized, diluted, and diffused."[1] To reverse this trend, the Commission recommended a foundation in the "Five New Basics," a high school curriculum including 4 years of English, 3 years each of mathematics, science, and social studies, and one-half year of computer science. The Commission also recommended 2 years of foreign language for college-bound students.

The data below, from the High School and Beyond survey, indicate that a recent cohort of high school graduates falls well short of the New Basics recommended by the Commission, with almost half of their coursework taken in other subject areas. The data are from the high school transcripts of a sample of students from the class of 1982. The transcript information includes the courses taken from the 9th through the 12th grades.

Course titles cannot tell us what students actually learn in school. The content of a course entitled "Algebra I" or "General Science" may vary substantially from school to school. In spite of this, even broad categories can suggest the range and depth of academic coursework taken by students. In general, students who complete the New Basics achieve at higher levels than comparable students with a less rigorous high school curriculum.[2]

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[1] U.S. Department of Education, National Commission on Excellence in Education, *A Nation at Risk*. Washington, DC: U.S. Government Printing Office, 1983.

[2] Alexander, K.L., and Pallas, A.M., "Curriculum Reform and School Performance: An Evaluation of the 'New Basics'." *American Journal of Education*, *92* (1984):391-420.

Table 1:7

Average credits earned by 1982 high school graduates by subject area and number of "New Basics" credits recommended by the National Commission on Excellence in Education

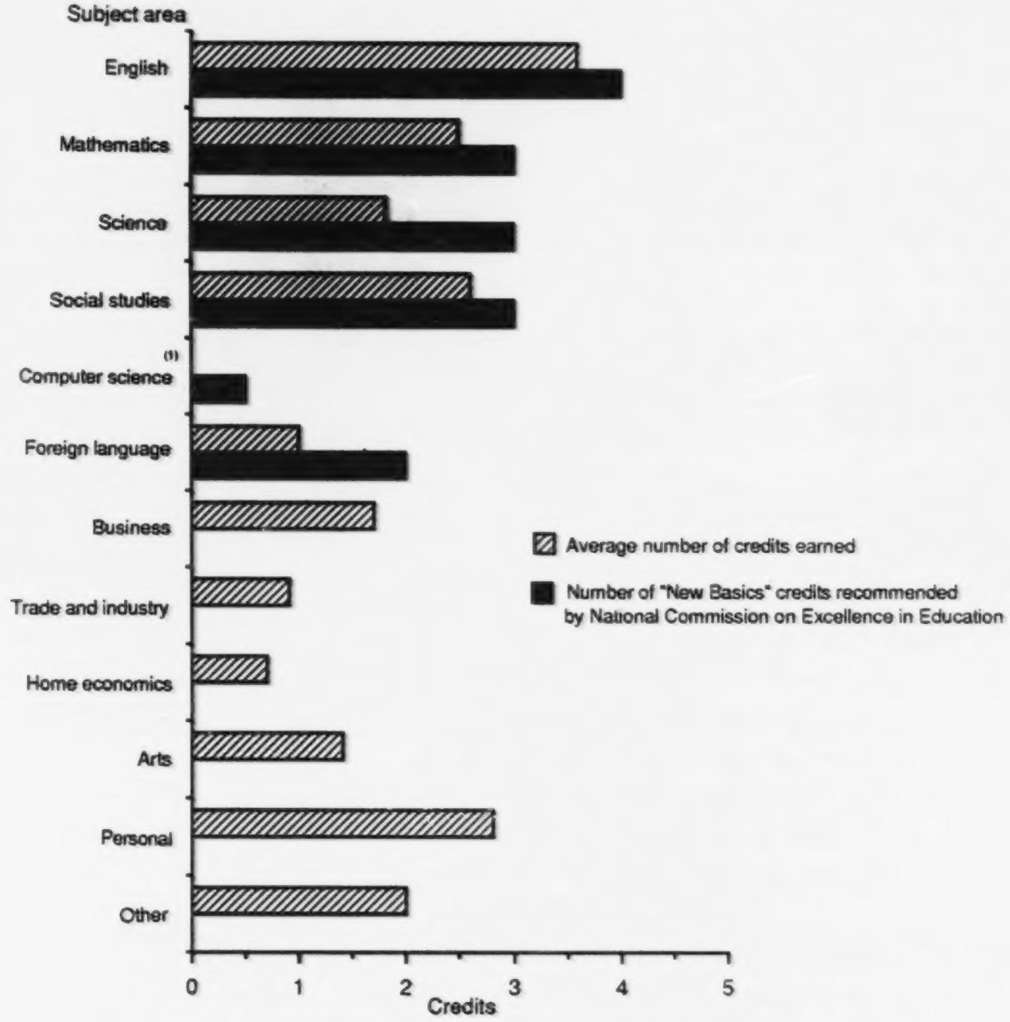
	Average number of credits earned	Number of "New Basics" credits recommended
English	3.6	4.0
Mathematics	2.5	3.0
Physical and life science	1.8	3.0
Social studies	2.6	3.0
Computer science	(1)	0.5
Foreign language	1.0	2.0
"New Basics" total	11.5	15.5
Business	1.7	—
Trade and industry	0.9	—
Home economics	0.7	—
Arts	1.4	—
Personal[2]	2.8	—
Other	2.0	—
Total	21.0	—

[1] Because of the small number of students who had taken a course in computer science, that subject area is included in "Other."

[2] Includes basic skills, citizenship/civic activities, health-related activities, interpersonal skills, leisure and recreational activities, and personal awareness.

SOURCE: National Center for Education Statistics, High School and Beyond, 1982.

CHART 1:7 -- **"New Basics" curriculum versus actual credits earned by 1982 high school graduates**



(1) Because of the small number of students who had taken a course in computer science, that subject area is included in "Other".

SOURCE: National Center for Education Statistics, High School and Beyond Survey.

- On average, high school graduates fail to meet the National Commission on Excellence in Education's recommended New Basics curriculum.
- On average, slightly more than one-half of all the credits earned by high school students are in the New Basics.

A. Outcomes: Transitions

High school completion by race and ethnicity

In examining the outcomes of our schools, one important measure is whether students are able to complete the educational process. If they do not finish high school, then it is doubtful that they have obtained sufficient knowledge, skills, and abilities many citizens believe necessary to function productively in society.

Thus, one outcome measure of education is the extent to which students complete high school with classmates about the same age. The data in the accompanying table reflect percentages of students who have successfully completed 12th grade or the equivalent at ages 18-19, and ages 20-24.

The public generally expects 18- to 19-year-olds to have a high school diploma. And, indeed, most do. However, as can be seen from the table, many students take a longer period of time to complete their high school education. For example, the percentage of 20- to 24-year-olds having obtained a high school diploma or its equivalent is about 10 percentage points greater than that for 18- to 19-year-olds.

The data have been computed from tabulations from the Bureau of the Census Current Population Surveys. These data are collected from household interviews and include information on individuals who have completed 12 or more years of schooling or who have obtained an alternative credential such as a General Educational Development (GED) certificate.

Table 1:8

High school completion by race and Hispanic origin, persons ages 18 to 19 and 20 to 24: 1974 to 1985

	Age: 18 to 19				Age: 20 to 24			
Year	Total	White	Black	Hispanic[1]	Total	White	Black	Hispanic[1]
	Percentage of age group				Percentage of age group			
1974	73.4	76.2	55.8	48.9	83.9	85.6	72.5	59.0
1975	73.7	77.0	52.8	50.0	83.9	85.9	70.5	61.3
1976	73.1	75.4	58.2	50.9	83.7	85.4	71.9	58.0
1977	72.9	75.7	54.9	50.7	83.7	85.1	73.4	56.6
1978	73.5	76.3	54.9	48.9	83.7	85.2	73.5	58.7
1979	72.8	75.3	56.4	53.7	83.2	84.9	71.8	55.8
1980	73.7	76.1	59.3	46.1	83.8	85.1	74.3	57.1
1981	72.5	74.8	59.6	47.2	83.7	85.0	75.7	59.3
1982	72.0	74.5	58.2	51.7	84.1	85.4	76.2	60.2
1983	72.7	75.6	59.1	50.3	83.3	84.6	75.8	56.6
1984	73.3	75.5	63.0	58.3	84.6	85.7	79.3	60.7
1985	74.6	76.7	62.7	49.8	85.3	86.0	80.8	67.3

[1] Most of the year-to-year differences in completion rates for Hispanics are not statistically significant due to the small size of the Hispanic sample.

NOTE: Asians are not included in the analysis because they are not identifiable from the October Current Population Survey data tapes.

SOURCES: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Population Characteristics, Series P-20. *School Enrollment—Social and Economic Characteristics of Students: October* (various years); Current Population Surveys (unpublished tabulations).

CHART 1:8A -- **High school completion rates by race and Hispanic origin, persons age 18-19**

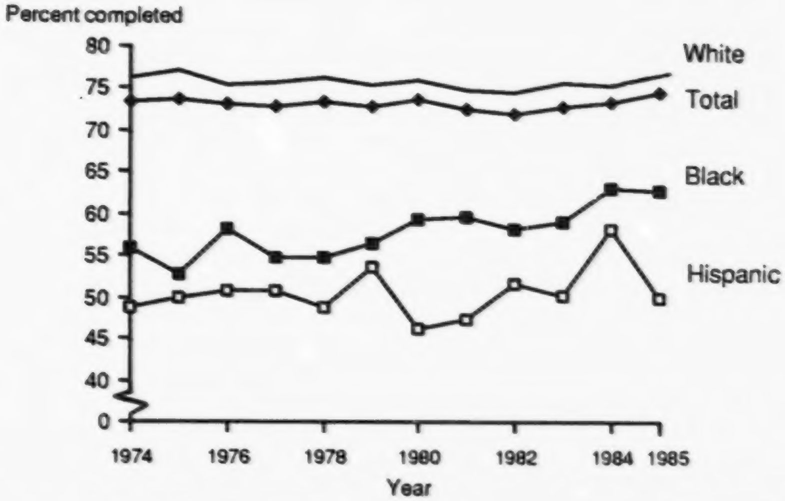
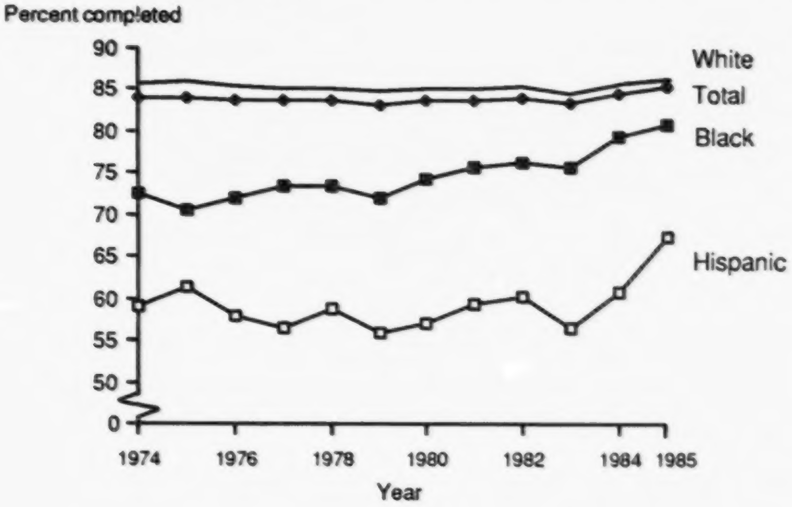


CHART 1:8B -- **High school completion rates by race and Hispanic origin, persons age 20-24**



SOURCE: Bureau of the Census, Current Population Reports, Series P-20.

- Nationally, slightly less than three-quarters of all 18- and 19-year-olds have completed high school.

- The proportion of 20-to 24-year-olds who have completed high school has held steady at about 84 percent since 1974.

- The high school completion rate among blacks, for both 18-to 19- and 20-to 24-year-olds, has increased in the last decade. The rates for both blacks and Hispanics still lag far behind those of whites.

A. Outcomes: Transitions

Post-high school activities of students

What students actually do after leaving high school is not a direct measure of the adequacy of the students' preparation to assume certain roles in society. Information on post-high school activity can, nonetheless, serve as a guide for school officials who compare national trends with local or State trends, and adjust their instructional programs to meet needs of their own students.

The education- and work-related activities in the first 4 years after high school were somewhat different for the classes of 1972 and 1980. There was a general tendency for the class of 1972 to enroll in school or work on a full-time basis, while a greater proportion from the class of 1980 combined these activities or pursued them on a part-time basis.

For the class of 1972, 29 percent were attending a 4-year institution in the first year after high school with only a slight decline by the 4th year. Over that period, however, there was a substantial shift in work status. The proportion of working students rose from about a third to over half of the segment attending a 4-year institution. Students from the class of 1980 were more likely to be attending a 4-year college than their 1972 counterparts, and the proportion working while attending a 4-year school was considerably higher for the class of 1980.

There was virtually no difference between the two classes in the percentage that attended a 2-year school and did not work. For both classes the majority of 2-year students also worked. However, the proportion working was consistently higher for the class of 1980.

Among nonstudents, the proportion of young people working full-time increased the longer they were out of high school, particularly for the class of 1972. In addition, a greater proportion of the class of 1980 was working on a part-time basis.

See Appendix C for methodology.

Table 1:9

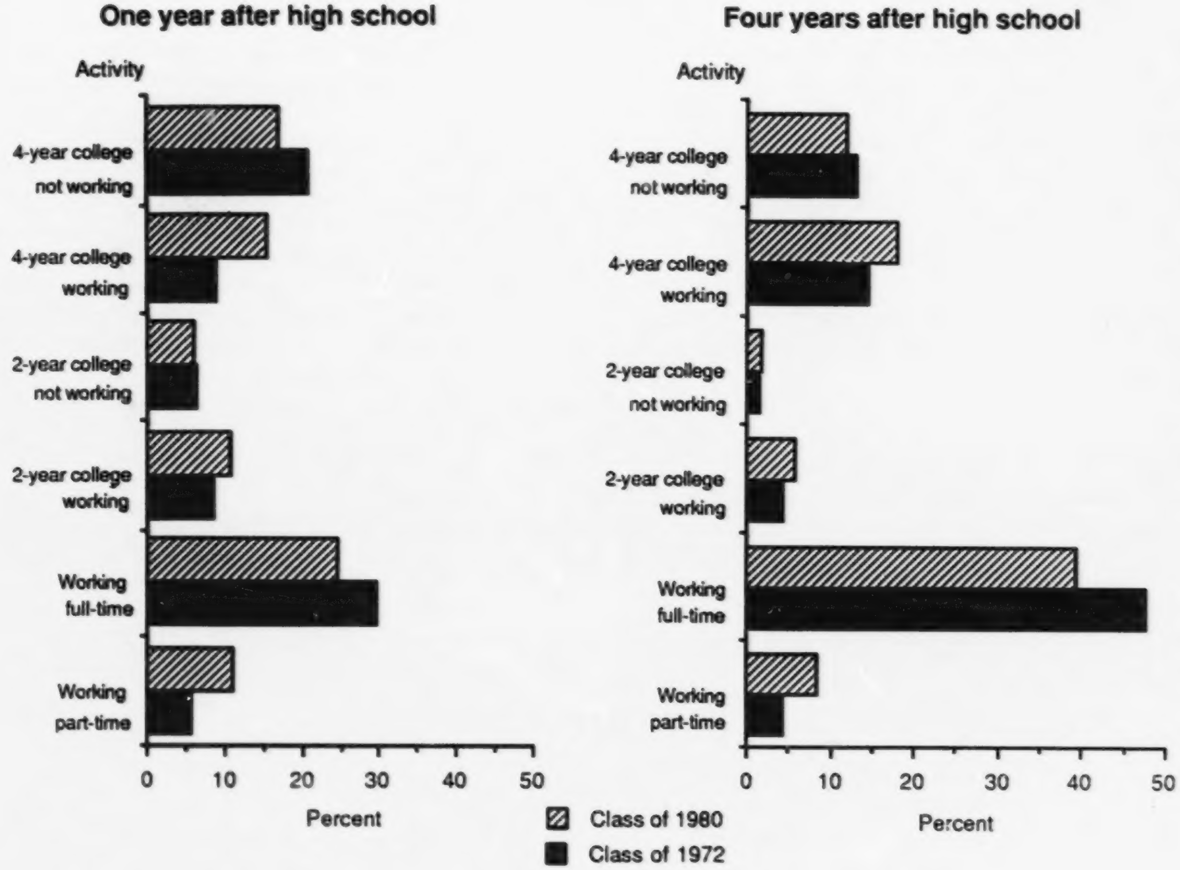
A comparison of activities after high school reported by the classes of 1972 and 1980

	Year after high school							
	First	Second	Third	Fourth	First	Second	Third	Fourth
	Class of 1972				Class of 1980			
Activity:								
Enrolled in 4-year college, did not work	20.6	16.2	15.2	13.1	16.9	14.4	13.4	11.9
Enrolled in 4-year college and worked	8.7	10.8	12.7	14.4	15.4	15.9	17.0	18.0
(Subtotal)	(29.3)	(27.0)	(27.9)	(27.5)	(32.3)	(30.3)	(30.4)	(29.9)
Enrolled in 2-year college, did not work	6.2	4.4	2.2	1.4	6.0	4.3	2.7	1.7
Enrolled in 2-year college and worked	8.4	8.4	4.9	4.2	10.8	10.6	7.8	5.8
(Subtotal)	(14.6)	(12.8)	(7.1)	(5.6)	(16.8)	(14.9)	(10.5)	(7.5)
Enrolled in vocational-technical school, did not work	3.9	2.3	1.4	0.7	1.8	1.6	0.7	0.6
Enrolled in vocational-technical school and worked	3.5	3.2	2.6	1.8	2.0	1.8	1.3	1.0
Other study	2.0	0.5	0.4	0.8	3.1	3.2	0.8	1.1
Worked full-time, did not study	29.6	37.8	43.8	47.8	24.5	29.0	35.2	39.4
Worked part-time, did not study	5.7	4.3	4.0	4.3	11.0	10.2	8.0	8.3
Other[1]	11.5	12.1	12.9	11.6	8.7	9.0	13.3	12.3

[1] Includes those unemployed, those not in the labor force, military personnel, homemakers, and those looking for work.

SOURCES: National Center for Education Statistics, National Longitudinal Study (unpublished tabulations) and High School and Beyond (unpublished tabulations).

CHART 1:9 -- **A comparison of activities after high school by the classes of 1972 and 1980**



SOURCE: National Center for Education Statistics, National Longitudinal Study and High School and Beyond Survey.

- The proportion of students working while attending a 4-year college in the first year after high school was greater for the class of 1980 than for the class of 1972 -- 15 percent versus 9 percent, respectively.
- For the classes of 1972 and 1980, those enrolled in 4-year colleges and not working declined between the first and fourth year after high school -- from 21 to 13 percent, and from 17 to 12 percent, respectively.
- The proportion of students from the classes of 1972 and 1980 working (part-time and full-time) and not attending school increased between the first and fourth year after high school -- from 35 to 52 percent, and from 36 to 48 percent, respectively.

A. Outcomes: Transitions

Literacy skills of young adults

The National Assessment of Educational Progress (NAEP) recently completed an assessment of the literacy skills of young adults age 21 to 25. Rather than a single measure or specific point on a scale that separates the "literate" from the "illiterate," the NAEP approach to literacy provides a means for understanding the various types and levels of literacy skills that, once acquired, allow an individual successfully to use a broad range of materials for different purposes. The definition of literacy adopted was: *Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.*

The literacy skills were characterized by three scales representing distinct aspects of literacy

- *Prose comprehension*—understanding and using information from texts such as editorials and news stories;
- *Document literacy*—locating and using information contained in nontextual materials including forms, maps, and graphs;
- *Quantitative literacy*—knowledge and skills needed to apply arithmetic operations in combination with printed materials, as in balancing a checkbook.

In addition, multiple-choice exercises similar in content to traditional tests of reading achievement were administered to link the performance of young adults to that of students participating in the NAEP reading assessment. Three levels of literacy which appear to represent minimal, average, and advanced performance on each of the four scales are shown in Table 1:10.[1] The construction and interpretation of the scales is described in Appendix C.

This study of young adults clearly demonstrates that there is a literacy problem, but the problem is *not* one of illiteracy for the overwhelming majority of young adults. Almost all are able to perform tasks such as writing a simple description of the type of job they would like or matching money-saving coupons to a shopping list. However, a relatively small percentage are able to do well on more complex tasks such as synthesizing the main argument from a newspaper editorial or using a bus schedule effectively. See Table A6 for details by selected demographic characteristics.

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[1] About 2 percent of the sample were judged by the survey administrators to have such limited literacy skills that the simulation tasks would unduly frustrate or embarrass them. About half of this group reported being unable to speak English. Table 1:10 is based on those who completed the tasks.

Table 1:10

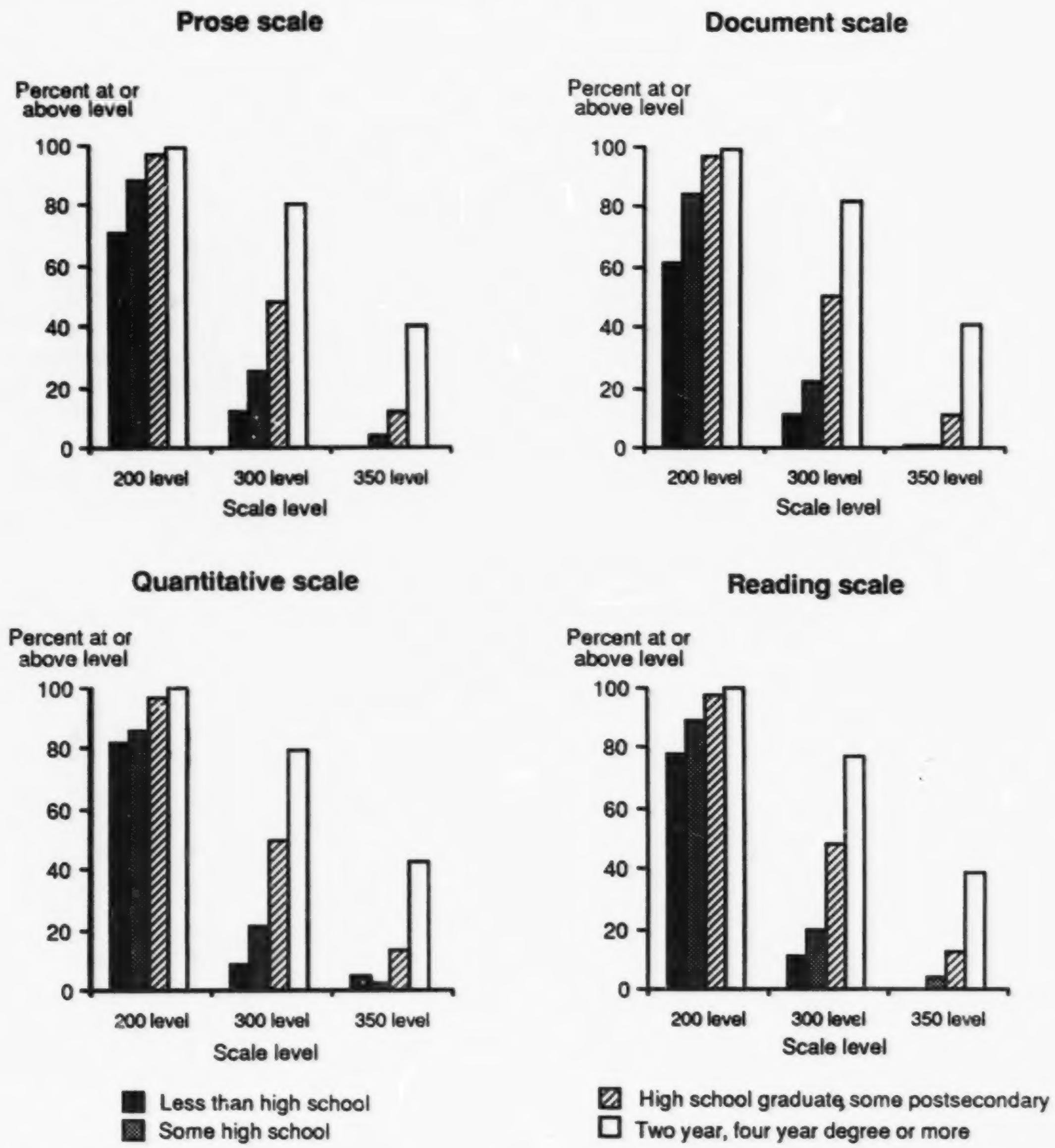
Percentage of young adults at or above three levels of difficulty on the prose scale, document scale, quantitative scale, and NAEP reading scale, by education: 1985

Scale score and educational attainment	Prose scale	Document scale	Quantitative scale	NAEP reading scale
Score of 200				Basic
Total	96.0	95.5	96.4	96.8
Less than high school	71.2	61.8	81.5	78.0
Some high school	88.1	84.0	85.9	89.3
High school graduate, some postsecondary	96.7	96.9	97.2	97.3
2-year, 4-year degree or more	99.6	99.4	99.8	99.8
Score of 300				Adept
Total	56.4	57.2	56.0	54.4
Less than high school	12.2	11.0	8.5	10.7
Some high school	25.1	22.0	20.9	19.5
High school graduate, some postsecondary	48.4	50.2	49.4	48.4
2-year, 4-year degree or more	80.5	81.8	79.8	77.3
Score of 350				Advanced
Total	21.1	20.2	22.5	20.9
Less than high school	0.0	0.7	4.4	0.0
Some high school	3.8	0.8	2.3	4.1
High school graduate, some postsecondary	12.2	10.9	13.4	12.9
2-year, 4-year degree or more	40.3	40.7	42.9	38.8

NOTE: The score indicating difficulty level designates that point on the scale at which the individual has an 80 percent probability of responding correctly to tasks at that level.

SOURCES: Kirsch, I., and Jungeblut, A. *Literacy: Profiles of America's Young Adults* (Report No. 16-PL-02), Princeton, NJ: National Assessment of Educational Progress, 1986. National Assessment of Educational Progress, Young Adult Literacy, 1985, unpublished data.

CHART 1:10 -- A literacy profile of young adults


Prose scale

Document scale

Quantitative scale

Reading scale

SOURCES: Kirsch, I. and Jungeblut, A. Literacy : Profiles of America's Young Adults, 1986; National Assessment of Educational Progress, Young Adult Literacy, 1985, unpublished data.

- While the overwhelming majority of young adults adequately perform tasks at the lower levels on each of the scales, sizable numbers appear unable to do well on tasks of even moderate complexity. Only a small percentage is estimated to perform at levels typified by the more complex and challenging tasks.

- Performance on the literacy scales rises markedly with each additional level of educational attainment.

College-level remedial course offerings and enrollments

Since the mid-1970's, educators have voiced increasing concern about the adequacy of graduating high school students' academic performance. Concerns have also been raised about the need for postsecondary institutions to offer coursework to remedy basic skill deficiencies of college-going youths. A national survey revealed that in 1983-84, the majority (82 percent) of all colleges and universities with freshmen offered some form of "remedial" courses or programs designed to help students lacking the skills necessary to perform college-level work. (Other terms for these courses include "compensatory," "basic skills," or "developmental.")

Of these institutions, the majority reported enrollment increases in remedial classes of 10 percent or more since 1978, including 19 percent with very large increases (30 percent or more). About a third had relatively stable enrollments, while less than 5 percent reported remedial enrollment decreases. Overall, public institutions, 2-year institutions, and open admissions colleges were more likely to offer remedial courses than were other colleges (Table 1:11A). Fewer private, 4-year, and more selective schools offered such courses but the proportion doing so was still quite high.

The survey also obtained data on the percentage of all freshmen enrolled in remedial courses by subject (Table 1:11B): 25 percent in mathematics, 21 percent in writing, and 16 percent in reading. Because the survey did not identify students taking more than one remedial course, the unduplicated count of college freshmen taking remedial courses is unknown.

Table 1:11A

Institutions of higher education offering remedial/developmental courses in reading, writing, and mathematics, by control, type of institution, and admissions criteria: 1983–1984

Institutional characteristics	Number with freshmen	Percentage offering one or more remedial courses			
		Reading, writing, or mathematics	Reading	Writing	Mathematics
All institutions	2,785	82	66	73	71
Control					
Public	1,419	94	87	89	88
Private	1,366	70	44	56	53
Type					
4-year	1,490	78	53	69	61
2-year	1,295	88	80	78	82
Admissions criteria[1]					
Open	1,258	91	87	83	85
Liberal	714	72	54	61	64
Traditional	354	80	52	75	65
Selective	459	68	37	62	48

Table 1:11B

Percentage of freshmen participating in remedial/developmental courses offered by institutions of higher education: 1983–1984

	Average percentage of entering freshmen participating		
	Reading	Writing	Mathematics
All institutions	16	21	25
Public	18	22	27
Private	9	12	15
4-year	12	17	19
2-year	19	23	28

[1] See the Glossary for the definitions of these criteria.

SOURCES: U.S. Department of Education, National Center for Education Statistics, "Many College Freshmen Take Remedial Courses," NCES Bulletin 85-211b, September 1985; and *Indicators of Education Status and Trends*, 1985.

CHART 1:11A -- Percentage of institutions of higher education offering remedial/ developmental courses: 1983-84

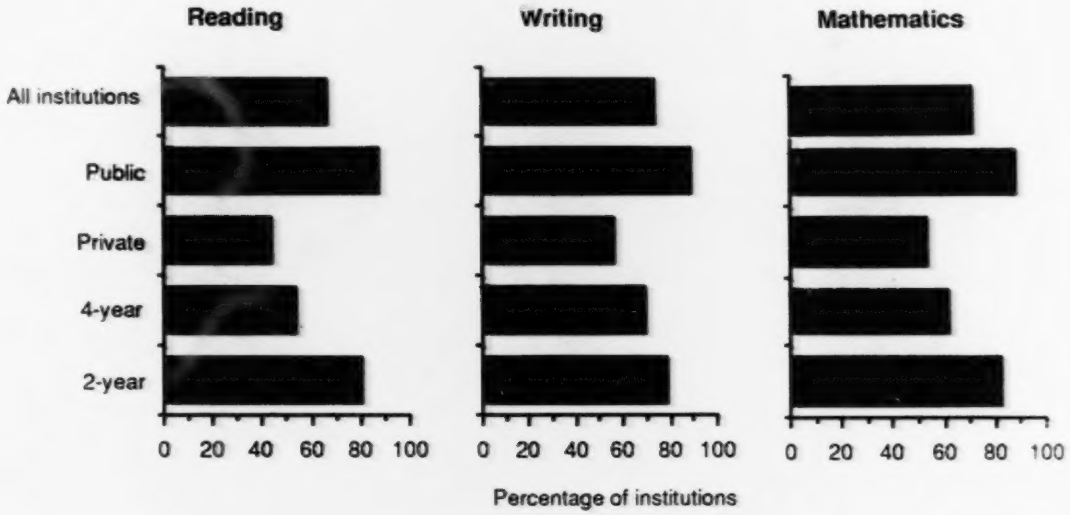
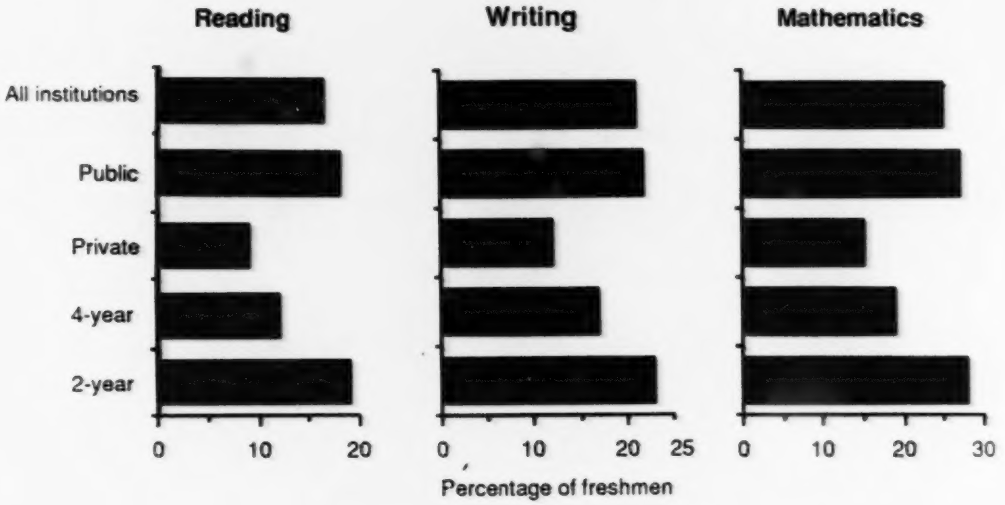


CHART 1:11B -- Percentage of freshmen enrolled in remedial/developmental courses: 1983-84



SOURCE: U.S. Department of Education, Fast Response Survey System, 1985.

- Though opportunities for academic remediation are more likely to occur at public and 2-year schools, they also exist at most private and 4-year schools.

- Freshman enrollment in remedial classes was greater for mathematics than for writing or reading. These percentages vary by control and type of institution.

Participation of public and private high school graduates in postsecondary education

There are two vital sectors of American education—public and private. In 1985, approximately 11 percent of kindergarten through 12th grade students were enrolled in private schools.[1] Many of the measures used in this publication report on American students without distinguishing between public and private schools.

In many cases, samples are not sufficiently large to report separately for these two types of schools. In recent years, there has been an increasing volume of research on effective schools and the relative outcomes of public and private schools, looking at outcome measures such as cognitive achievement and high school completion rates.[2] This indicator goes one step further and looks at postsecondary enrollment and completion rates for graduates of public and private high schools.

The data in Table 1:12 come from the High School and Beyond (HS&B) survey of 1980 high school seniors. The longitudinal data from HS&B allow an examination of the educational progress of the 1980 high school graduates 4 years after the initial survey. The HS&B survey includes both public and private schools.

It is difficult to know how much of the differences in postsecondary participation by public and private high school graduates to attribute to differences in the ways private and public high schools operate, and how much to other differences, particularly in student backgrounds. For example, the HS&B survey shows that 27 percent of parents of public high school seniors have completed 4 or more years of college compared with parents of 47 percent of private high school seniors. Such differences in family background have been shown to be related to educational outcomes and must be taken into account when making comparisons.

Table 1:12

Postsecondary enrollment and completion rates for 1980 high school graduates, by control of high school

	High school type	
	Public	Private
Percentages of 1980 high school graduates who enrolled in postsecondary education in October 1980, by type of postsecondary institution		
Any postsecondary institution	48.5	68.9
4-year	28.9	48.9
2-year	16.1	15.1
Vocational/technical	3.5	4.9
Percentages of 1980 high school graduates who had enrolled in postsecondary education by February 1984, by type of postsecondary institution		
Any postsecondary institution	63.7	84.4
4-year	42.4	69.6
2-year	28.3	24.4
Vocational/technical	7.4	10.2
Percentages of 1980 high school graduates who entered a postsecondary institution and subsequently earned a certificate, license, or degree as of summer 1984		
Certificate/degree		
BA/BS degree	25.0	30.5
AA degree	17.5	13.8
License	13.6	10.2
Certificate	33.9	18.4

SOURCE: U.S. Department of Education, Center for Statistics, High School and Beyond Survey, 1985.

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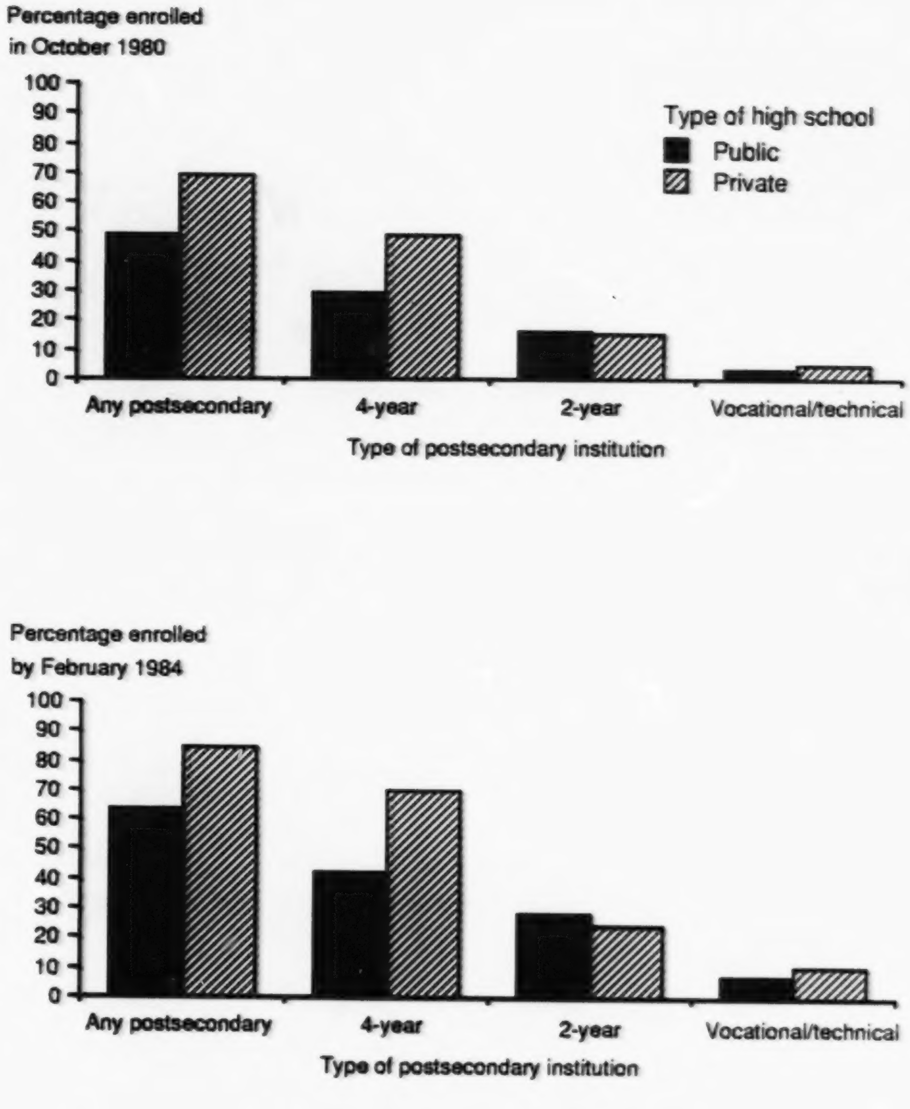
[1] Williams, M., "Private School Enrollment." *The Condition of Education, 1986 Edition*. U.S. Department of Education.

[2] Coleman, J., Hoffer, T., and Kilgore, S. *High School Achievement*. New York: Basic Books, 1962. Greeley, A. *Catholic High Schools and Minority Students*. New Brunswick, NJ: Transaction, 1982.

CHART 1:12 – Postsecondary enrollment rates for 1980 high school graduates



SOURCE: Center for Statistics, High School and Beyond.

- Graduates of private high schools are more likely to begin postsecondary education immediately after high school, and are more likely to enroll in postsecondary education in the 3 1/2 years following high school, than graduates of public high schools.

- Graduates of private high schools are much more likely to enroll in a 4-year college than graduates of public high schools.

B. Resources: Fiscal Resources

Current expenditures per pupil in public schools

A frequently used gauge of the amount of education resources going to public schools is expenditures per pupil. Resources going to schools can be measured one resource at a time (e.g., teacher/pupil ratio) or several resources together (e.g., expenditures per pupil). Because they can directly affect the level of expenditures, policymakers at local, State, and Federal levels are interested in both types of resource measures. In particular, they are interested in how these measures behave both over time and between jurisdictions.

This indicator focuses on the second measure, expenditures per pupil, and examines them over time. Expenditures per pupil are presented in current as well as constant dollars, adjusted for inflation. The Consumer Price Index was used to make the inflation adjustment.

For several reasons, this commonly reported measure should be used with care. First, the data for this indicator are based on State-reported data on expenditures and counts of pupils. The States do not measure these terms in exactly the same way, and some have changed their definitions over time. Second, a more appropriate adjustment of current to constant expenditures would be based on changes in the prices of goods and services purchased by public schools rather than consumers, but there is no available education expenditure index of this type. Finally, the indicator provides no information about individual school district expenditures, the quality or type of resources purchased, and their impact on the learning process.

Expenditures per pupil for each of the 50 States are found in Table A7 in Appendix A.

Table 1:13

Current expenditures per pupil in average daily attendance in public elementary and secondary schools: Selected Years 1969–70 to 1985–86

	Current expenditures per pupil[1]			Current expenditures per pupil[1]	
School year	Current dollars (Unadjusted)	Constant dollars (Adjusted to 1969–70 purchasing power)[2]	School year	Current dollars (Unadjusted)	Constant dollars (Adjusted to 1969–70 purchasing power)[2]
1969–70	$816	$816	1979–80	$2,272	$1,105
1971–72	990	909	1980–81	2,487	1,085
1973–74	1,207	977	[3]1981–82	2,726	1,094
1975–76	1,504	1,097	[3]1982–83	2,955	1,137
1976–77	1,638	1,054	1983–84	3,173	1,177
1977–78	1,823	1,099	[4]1984–85	3,449	1,232
1978–79	2,021	1,114	[5]1985–86	3,677	1,276

[1] Includes day school expenditures only; excludes current expenditures for other programs. Based on pupils in average daily attendance in public elementary and secondary schools.

[2] Based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, adjusted from calendar years to school years.

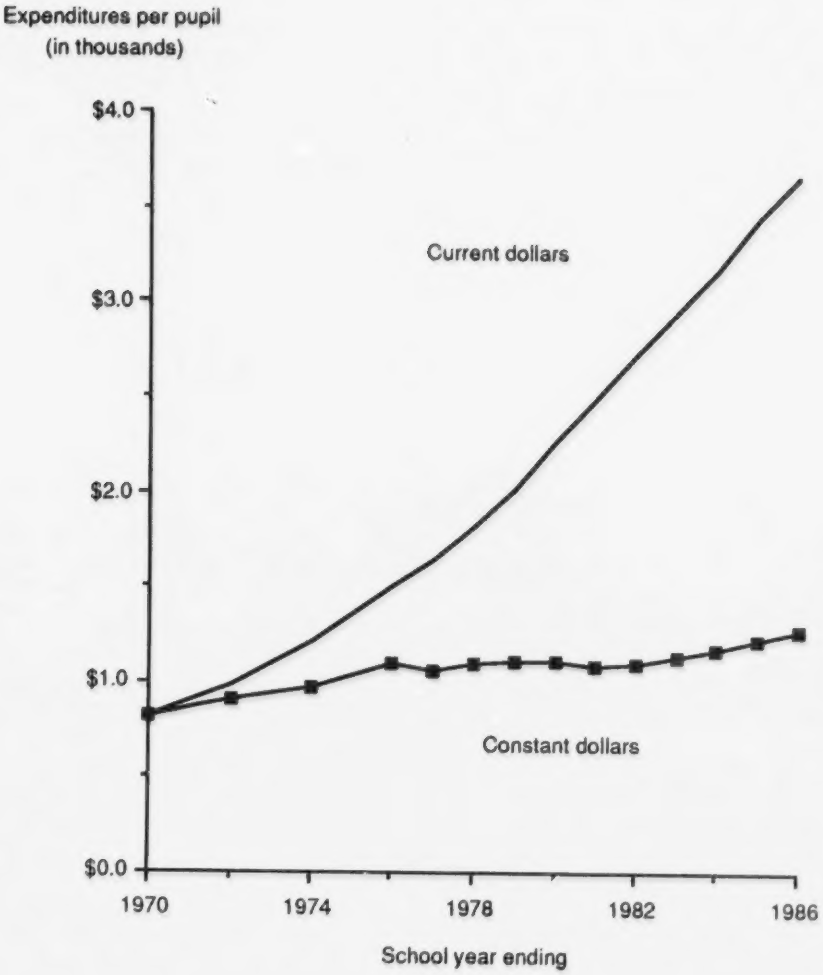
[3] These data have been updated since the previous *Indicators* publication.

[4] Preliminary, October 1986.

[5] Estimated by the National Education Association.

SOURCES: U.S. Department of Education, Center for Statistics, *Digest of Education Statistics, 1985–86*, and Common Core of Data, unpublished tabulations. National Education Association, *Estimates of School Statistics: 1985–86*, April 1986.

CHART 1:13 -- Current expenditures per pupil



SOURCE: Center for Statistics, Digest of Education Statistics 1985-86.

- Between the 1969-70 and 1985-86 school years, expenditures per pupil increased by 351 percent in current dollars. On average the annual increase was about 10 percent. The increase was 56 percent in constant dollars. On an annual basis the increase was nearly 3 percent, on average.
- Between the 1982-83 and 1985-86 school years, expenditures per pupil increased by 24 percent in current dollars and by 12.3 percent in constant dollars for average annual increases of 7.5 and about 4 percent respectively.

B. Resources: Fiscal Resources

Public school revenues

Public schools obtain revenues from three sources: local, State, and Federal governments. The share that each contributes is determined by many factors, including the jurisdiction's perception of its role in supporting public education (which to some extent is constitutionally prescribed); the extent to which it taxes itself; the size of its property, sales, and/or income tax base; and the competing demands on its tax revenues. Historically, local governments have been limited to property taxes as a basis for raising funds. In recent years they have experienced difficulty in using this source for additional funds (e.g., Proposition 13 in California). State governments have historically used the sales tax as a revenue-raising vehicle. More recently they have turned to income taxes as an additional source.

The data indicate that the revenue shares of two of the three jurisdictions have changed considerably over the last 60 years. Most noticeable is the decline in the local government's share to approximately one-half its 1919-20 level with the concommitant threefold increase in the State government share. Finally, while the Federal government's share has been small, it grew steadily between 1919-20 and 1979-80 when it peaked at nearly 10 percent. It is now less than 7 percent.

Table 1:14

Sources of public elementary and secondary school revenues: 1920 through 1986

School year	Total revenues[1] (In thousands)	Sources		
		Local[2]	State	Federal
1919–20	$970,121	83.2	16.5	0.3
1929–30	2,088,557	82.7	16.9	0.4
1939–40	2,260,527	68.0	30.3	1.8
1949–50	5,437,044	57.3	39.8	2.9
1959–60	14,746,618	56.5	39.1	4.4
1969–70	40,266,923	52.1	39.9	8.0
1979–80	96,881,165	43.4	46.8	9.8
1980–81	105,949,087	43.4	47.4	9.2
1981–82	110,191,257	45.0	47.6	7.4
1982–83	117,205,793	44.9	48.0	7.1
1983–84[3]	126,377,395	45.1	48.0	6.8
1984–85[4]	139,634,982	43.7	49.6	6.6
1985–86[4]	149,667,997	43.5	50.1	6.4

[1] In current dollars.

[2] Includes Intermediate sources (See the Glossary for the definition).

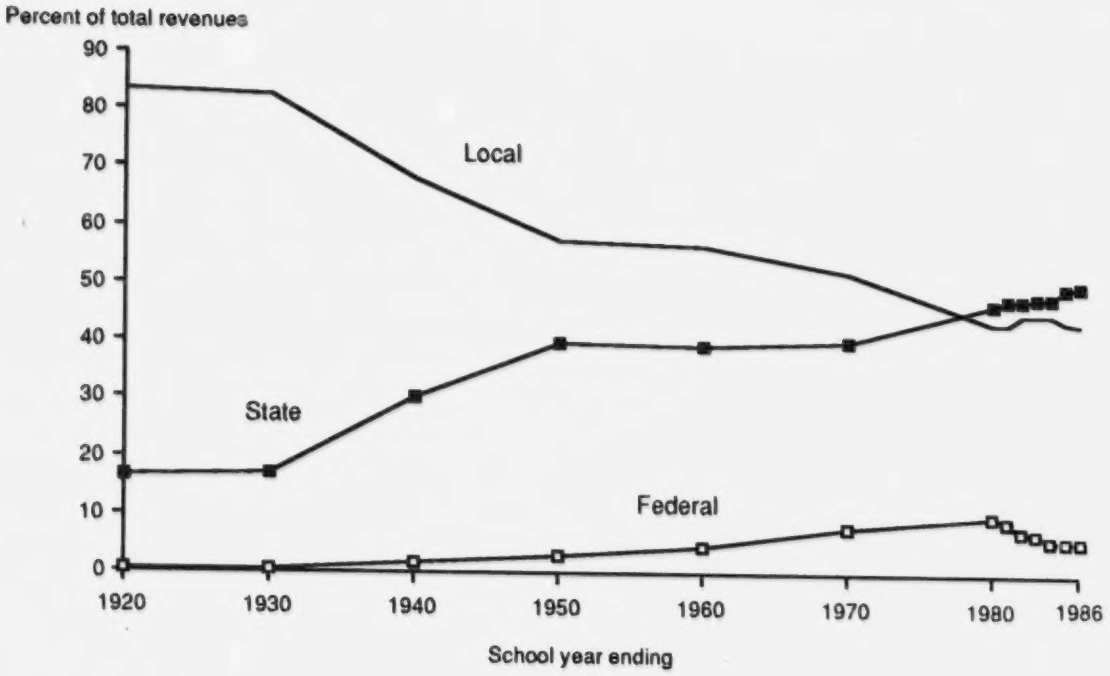
[3] Data for local and State revenues are preliminary, December 1985.

[4] Estimated by the National Education Association.

NOTE: Data beginning in 1959–60 include Alaska and Hawaii.

SOURCES: U.S. Department of Education, Center for Statistics, *Digest of Education Statistics, 1985–86.* National Education Association, *Estimates of School Statistics: 1985–86*, April 1986, copyrighted.

CHART 1:14 -- **National trends in revenue sources for public elementary and secondary education**



SOURCE: Center for Statistics, Digest of Education Statistics, 1985-86.

- Total revenues for elementary and secondary education have increased over 100-fold since the 1919-20 school year.
- State and local governments have been the primary source of revenues for public elementary and secondary education, while the Federal share has remained relatively small.
- In 1979 an historic shift occurred when the States' share of revenues rose above the locals' share for the first time.
- Between the 1919-20 and 1985-86 school years, local governments' share of total revenues fell from 83.2 percent to 43.5 percent, a decline of nearly 40 percentage points.
- State governments' share of revenues has made up for the decline in local governments' share. State governments' share increased 3-fold between the 1919-20 and 1985-86 school years.
- Over the period 1920 to 1980, the Federal government's share increased the most, over 30-fold, but still remains only a small portion of total revenues.

B. Resources: Fiscal Resources

National index of public school finance in relation to population

Interpretation of the level of per pupil revenues available to public schools requires that a number of factors be taken into account. The national index presented here shows the relationship between per pupil public school revenues and per capita personal income. Alternative ways of presenting this relationship are:

(per pupil public education revenues/
per capita personal income) X 1000
OR
((public education revenues/total personal
income)/(public school pupils/
total population)) X 1000

The formula does not include private school enrollments or revenues, nor does it take into account other types of support of the public schools such as volunteer work by parents.

Since the index is based on four separate variables, changes over time in the overall index can be due to a variety of factors. For example, the index rose between 1929-30 and 1939-40 because (1) there was a small decrease in enrollments, (2) total revenues increased, and (3) per capita income fell. The index was higher in 1959-60 than it had been in 1949-50, because per pupil revenues increased proportionately more during the decade than did per capita income.

Great care should be taken in interpreting differences among the States, since differences in any of the formula factors affect the index. For example, a State that devoted 4 percent of its total personal income to education and had 10 percent of its population in school would have an index of 400. Another State that also devoted 4 percent of its total personal income to education, but enrolled 25 percent of its population in public schools would have an index of only 160. Thus, a State with a larger proportion of its population enrolled in public schools must raise more revenues for education to achieve the same index score as a similar State with a smaller proportion of its citizens in public schools.

State finance indices are found in Table A8.

Table 1:15

National index of public school revenues in relation to personal income: 1930 through 1986

Fall of the school year	National index	Total education revenues (Current dollars, in thousands)	Public elementary and secondary enrollment (In thousands)	Per pupil education revenues (Current dollars)	Per capita personal income (Current dollars)
1929–30	116.70	$2,088,557	25,678	$81.34	$697
1939–40	161.01	2,260,527	25,434	88.88	552
1949–50	157.13	5,437,044	25,111	216.52	1,378
1959–60	189.19	14,746,618	36,087	408.64	2,160
1969–70	237.66	40,266,923	45,619	882.68	3,714
1979–80	268.91	96,881,165	41,645	2,326.36	8,651
1980–81	272.27	105,949,087	40,987	2,584.94	9,494
1981–82	260.62	110,191,257	40,099	2,747.98	10,544
1982–83	265.98	117,205,793	39,652	2,955.86	11,113
1983–84	274.93	[1]126,377,395	39,352	3,211.46	11,681
1984–85	278.16	[2]139,634,698	39,305	3,552.60	12,772
1985–86	282.55	[2]149,687,997	[2]39,386	3,800.54	13,451

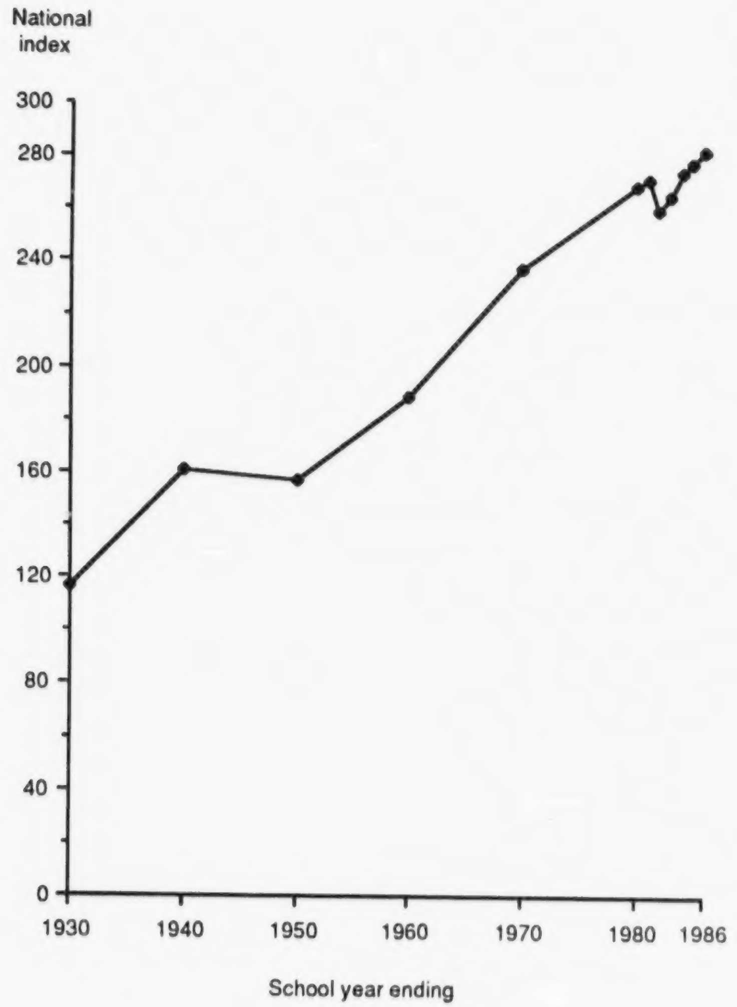
[1] State and local revenue components are preliminary as of December 1985.

[2] Estimated by the National Education Association.

NOTE: Data beginning in 1959–60 include Alaska and Hawaii. Revenues are all education revenues from local, State, and Federal sources for public elementary and secondary education for the relevant school year. Pupils are the number of public school pupils in average daily attendance during the school year. Per capita income is total personal income for the year divided by the population. While education revenues are generated from taxes paid by individuals and corporations out of current income, the income measure only includes personal income. Corporate income is not included. However, many analysts believe that taxes ultimately will be paid out of personal income because business taxes are passed on to the consumer.

SOURCES: U.S. Department of Education, Center for Statistics, unpublished data and *Digest of Education Statistics, 1985–86*. National Education Association, *Estimates of School Statistics, 1985–86*. 1986. U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*.

CHART 1:15 -- National index of public school finance in relation to population



SOURCE: Center for Statistics, The Condition of Education, 1986 Edition.

- The national index has more than doubled since 1930.
- The national index grew steadily, except for the World War II period, for the fifty years between 1930 and 1980.
- Since the 1980-81 school year the national index has been somewhat unstable, first falling and then rising.

B. Resources: Human Resources

Instructional staffing patterns in the public schools

One question that has risen continually in the debate over the quality of the schools is whether resources can be allocated more effectively to improve educational outcomes. To answer this question it is necessary to know how resources are currently allocated.

The most critical resource in the schools is the professional staff. However, in today's schools not all persons classified as professional or instructional staff actually work in the classroom. Instructional staff are comprised of classroom teachers plus principals, supervisors, librarians, guidance personnel, and related instructional workers. This indicator looks at the changes in the mix of instructional personnel since 1970.

From school year 1970-71 to school year 1979-80 total instructional staff grew by 9.9 percent. Nonclassroom instructional personnel showed the greatest percentage increase in this period (30.5 percent), while classroom teachers increased 7.5 percent. This growth occurred during times when the number of students was decreasing. From 1979-80 to 1982-83, by contrast, total instructional staff decreased 3.8 percent. Again, nonclassroom instructional personnel showed the greatest percentage change, down 5.0 percent to classroom teachers' 3.7 percent.

During the 2 years, 1983-84 and 1984-85, the number of instructional staff again began to increase, with nonclassroom and classroom instructional staff changing −1.2 percent and 1.4 percent, respectively.

Although nonclassroom instructional personnel showed the greatest percentage change during the last 15 years, they continue to comprise a small proportion of all professional staff. Therefore a small numerical increase in nonclassroom instructional staff can result in the large percentage increases noted above.

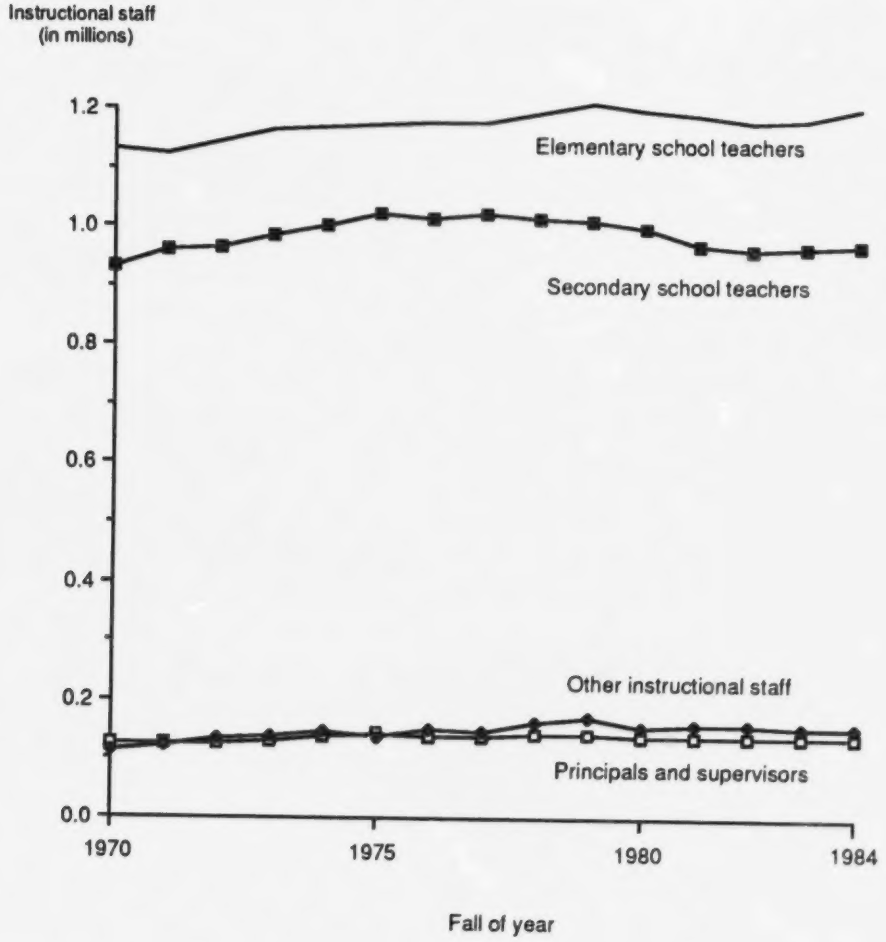
Table 1:16

Trends in the number of instructional staff: 1970–71 to 1984–85

School year	Elementary school classroom teachers	Secondary school classroom teachers	Total classroom teachers	Principals and supervisory instructional staff	Other nonsupervisory instructional staff	Total instructional staff	Average daily membership[1]
1970–71	1,130,347	931,896	2,062,243	125,260	112,381	2,299,884	45,393,630
1971–72	1,123,879	962,322	2,086,201	128,094	120,824	2,335,119	45,175,900
1972–73	1,142,938	965,908	2,108,846	128,311	135,198	2,372,355	45,131,680
1973–74	1,162,181	986,103	2,148,284	132,359	138,074	2,418,717	44,911,989
1974–75	1,169,300	1,001,395	2,170,695	140,279	144,909	2,455,883	44,442,070
1975–76	1,170,036	1,021,414	2,191,450	141,248	139,541	2,472,239	43,975,419
1976–77	1,175,532	1,010,769	2,186,301	137,363	149,591	2,473,255	43,610,204
1977–78	1,176,340	1,019,505	2,195,845	136,983	145,449	2,478,277	42,938,327
1978–79	1,193,268	1,012,645	2,205,913	143,654	161,723	2,511,290	41,934,900
1979–80	1,209,356	1,008,129	2,217,485	141,427	168,764	2,527,676	40,839,295
1980–81	1,195,725	996,438	2,192,163	138,894	153,686	2,484,743	40,126,444
1981–82	1,187,987	969,815	2,157,802	138,665	157,439	2,453,906	39,294,027
1982–83	1,176,299	959,958	2,136,257	136,605	158,094	2,430,956	38,803,420
1983–84	1,178,462	966,004	2,144,466	137,374	155,371	2,437,211	38,486,995
1984–85	1,199,232	967,678	2,166,910	137,619	153,601	2,458,130	38,729,996

[1] Average daily membership is defined as the number of students belonging to a school, those present plus those absent, when schools are actually in session.
SOURCE: National Education Association, *Estimates of School Statistics*, various years, copyrighted.

CHART 1:16 -- Trends in instructional staffing patterns



SOURCE: National Education Association, Estimates of School Statistics.

- The number of principals, supervisors and other non-classroom instructional personnel increased 30.5 percent from 1970-71 to 1979-80.
- However, classroom teachers outnumber non-classroom personnel 7 to 1.

B. Resources: Human Resources

Pupil/teacher ratios in public schools

Classroom teachers are perhaps the most critical resources in our educational system. They determine the nature of the classroom instruction provided to students in the Nation's schools. Relationships between the number of pupils and teachers are expressed in pupil/teacher ratios. The data and chart present pupil/teacher ratios in public elementary and secondary schools.

These pupil/teacher ratios reflect the total number of pupils enrolled and the number of "full-time-equivalent" classroom teachers, including those teachers who do not have regular classroom assignments such as art, music, and special education teachers. Also, pupil/teacher ratios do not reflect the educational services provided by staff outside the classroom such as counselors and librarians.

Another measure of this relationship is class size. This measure is based on reports from classroom teachers about the number of students in their classrooms. Pupil/teacher ratios have tended to be lower than average class size. For example, in 1980 class size was reported as an average of 25 at the elementary level and 23 at the secondary level. In comparison, the numbers of students reported in pupil/teacher ratios were 21 and 17, respectively. Over time, both pupil/teacher ratios and class size have declined.

Arguments persist about the value of small class size. Researchers who have attempted to link class size and student performance have not produced consistent results. Major improvements occur only in classes of 15 and below; further, small classes do not always mean greater achievement, reinforcing the critical importance of high-quality instruction no matter what the class size. Other research literature indicates that class size is a real concern for teachers, not because of its probable link to student outcomes, but because smaller classes have an effect on teachers' attitudes toward students, morale, and general satisfaction.[1]

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[1] Smith, M.L., and Glass, G.V., *Relationship of Class-Size to Classroom Processes, Teacher Satisfaction and Pupil Affect:* A Meta-analysis. San Francisco, CA: Far West Laboratory for Educational Research and Development, 1979.

Table 1:17

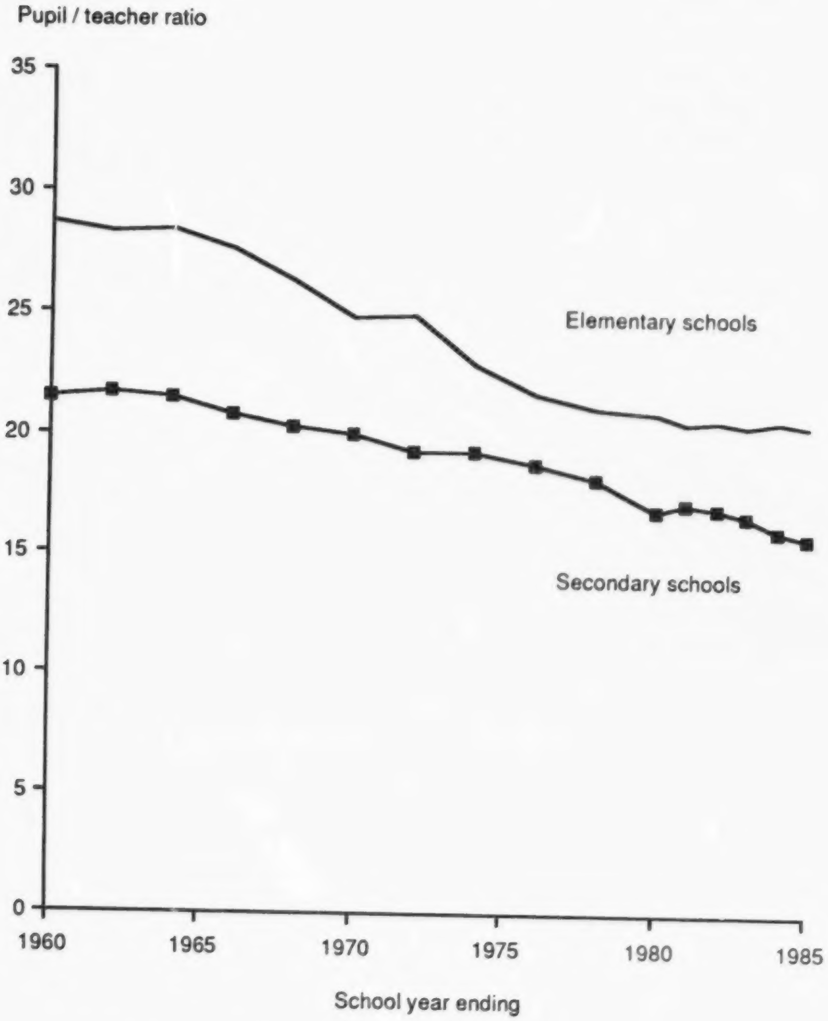
Trends in pupil/teacher ratios in public elementary and secondary schools: selected years 1959–60 to 1984–85

Year	Total	For elementary schools[1]	For secondary schools[1]
1959–60	26.0	26.7	21.5
1961–62	25.6	28.3	21.7
1963–64	25.5	28.4	21.5
1965–66	24.7	27.6	20.8
1967–68	23.7	26.3	20.3
1969–70	22.7	24.8	20.0
1971–72	22.3	24.9	19.3
1973–74	21.2	22.9	19.3
1975–76	20.4	21.7	18.8
1977–78	19.9	21.1	18.2
1979–80	19.0	20.9	16.8
1980–81	19.0	20.5	17.1
1981–82	18.9	20.6	16.9
1982–83	18.7	20.4	16.6
1983–84	18.5	20.6	16.0
1984–85	18.3	20.4	15.7

[1] For 1971–72 and subsequent years, the data by level were estimated by taking the proportion of elementary or secondary teachers reported separately by the National Education Association and applying these proportions to the Center for Statistics data on total numbers of teachers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools*, various years, and unpublished tabulations.

CHART 1:17 -- Trends in pupil / teacher ratios in public schools, by level



SOURCE: Center for Statistics, Statistics of Public Elementary and Secondary Day Schools.

- At the elementary school level, the ratio of pupils to teachers has dropped from 28.7 in 1959-60 to an estimated 20.4 in 1984-85.
- At the secondary school level, the ratio of pupils to teachers has fallen from 21.5 in 1959-60 to an estimated 15.7 in 1984-85.

B. Resources: Human Resources

Demand for new hiring of teachers

The demand for new hiring of teachers is expected to rise because of student enrollment increases, pupil/teacher ratio improvements, and educational reforms. This indicator estimates the anticipated demand for new hiring of teachers in elementary and secondary schools. The increase is expected to occur at both levels, but at different times. Enrollment increases are expected to create a significant demand for additional teachers at the elementary level from the mid-1980's into the early 1990's and a demand for more teachers at the secondary level in the 1990's. Demand for additional teachers at the elementary level, however, is expected to decrease in the late 1990's. The demand figures shown here depict national trends, but the demand for additional teachers will vary by geographical location and subject area as States experience different rates of enrollment growth over the period.

The estimation and projection of demand for additional classroom teachers are dependent on three major variables: teacher/pupil ratios, enrollment levels, and teacher turnover (including retirement). Of these three components, the teacher turnover rate is the hardest to estimate, because there is no current national survey that gathers such data. The teacher turnover rate must be estimated to compensate for this lack of data.

The Center for Statistics has developed three alternative projections of the demand for new hiring of teachers—low, intermediate, and high. The projections shown below are the intermediate-alternate projections of demand for new hiring of teachers, based on a 6-percent turnover rate.

Low and high alternative projections of total demand for additional teachers are shown in the publication, *Projections of Education Statistics to 1992-93*. The low alternative assumes a rate of 4.8 percent, while the high alternative is 8 percent. Data sources of the Bureau of Labor Statistics (BLS) and Center for Statistics (CS) have been used to monitor these assumptions. Based on data from these two sources, it has been estimated that the actual turnover rate currently lies between the CS intermediate- and high-alternative assumptions.

Table 1:18

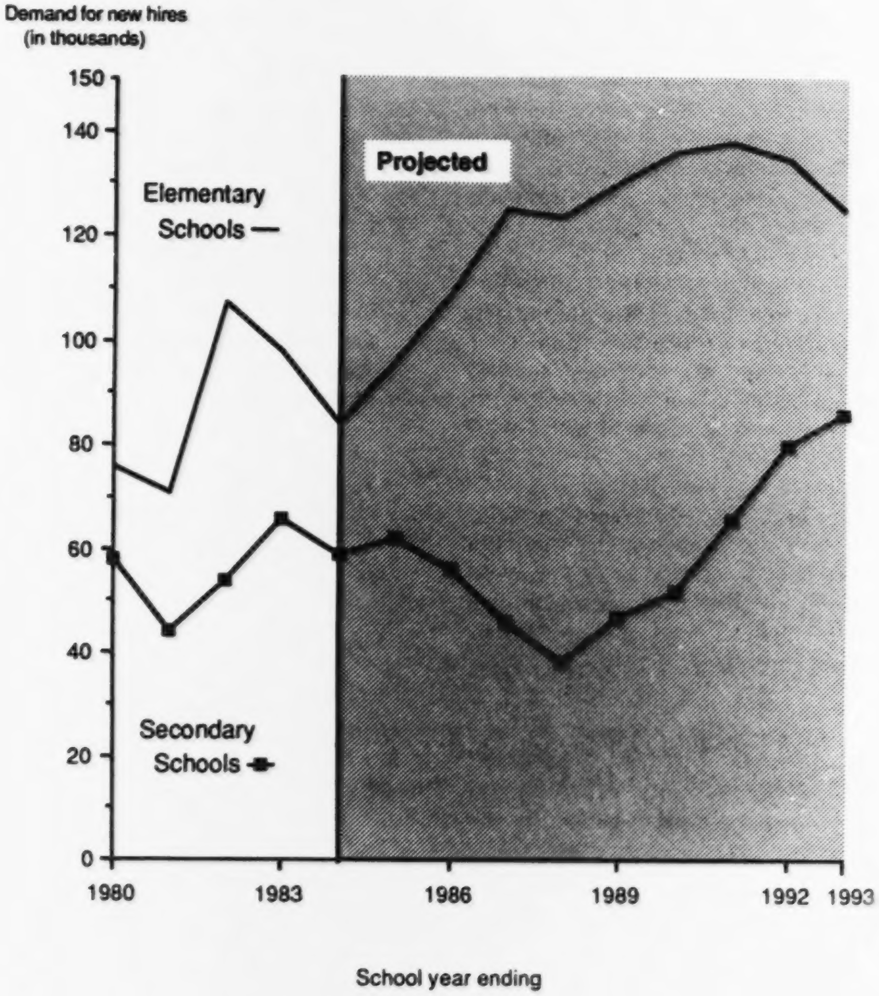
Trends in estimated demand for new hiring of classroom teachers in elementary/secondary schools: 1980 to 1993

Fall of year	Estimated demand for new hiring of teachers (In thousands)		
	Total	Elementary	Secondary
1980	134	76	58
1981	115	71	44
1982	161	107	54
1983	164	98	66
	Intermediate alternative projections[1]		
1984	143	84	59
1985	158	96	62
1986	165	109	56
1987	171	125	46
1988	162	124	38
1989	177	130	47
1990	188	136	52
1991	204	138	66
1992	215	135	80
1993	211	125	86

[1] See Sources of data, Appendix B for projection methodology.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1992–93*. 1985; and unpublished tabulations (January 1985).

CHART 1:18 -- Trends in estimated demand for new hiring of teachers, by level



SOURCE: Center for Statistics, Projections of Education Statistics to 1992-93.

- The demand for new hiring of elementary school teachers is expected to increase from the mid 1980's into the early 1990's before declining.
- The demand for new hiring of secondary school teachers is expected to increase from the late 1980's into the early 1990's.

B. Resources: Human Resources

Supply of new teacher graduates

A major concern to school officials and policymakers is whether there will be enough qualified teachers to meet the demand for classroom teachers in the future. With student enrollment projected to increase and expected retirements of teachers more new teachers will be needed each year. New teacher graduates, former teachers, and other sources will be tapped to meet this need. The demand and supply of new teachers will vary across States and localities and by field.

The indicator below presents past and projected trends in the supply of new teacher graduates. However, new teacher graduates are only part of the total supply of potential teachers. A complete identification of the supply would also include the reserve pool of teachers. This reserve pool includes new teacher graduates who presently do not seek teaching jobs; former teacher graduates not currently in the labor force; unemployed teachers; and former teacher graduates employed in other occupations who are seeking teaching jobs. Yet no national data exist on the size of the reserve pool. Recent Center for Statistics data suggest that over one-third of the new teacher hires in the early 1980's came from this reserve pool. Should new graduates enter the teaching field at about the same rate as in the recent past, an increasing proportion of new teacher hires will have to be drawn from the reserve pool if a shortage is to be avoided.

Another potential source for additional teachers is noneducation majors. Many of today's teachers do not have degrees in education. A 1981 survey of recent college graduates conducted by the Center for Statistics revealed that 80 percent of 1979-80 bachelor's degree recipients who were newly qualified to teach were education majors, while 20 percent had majors in liberal arts and other fields. There are no data on the extent to which liberal arts majors not currently teaching could be attracted to the teaching profession. Therefore, the level of teacher supply cannot be completely identified or projected.

Three projections of the supply of new teacher graduates are shown in Table 1:19. The low, intermediate, and high alternatives assume that new teacher graduates as a proportion of total bachelor's degrees will decline, remain constant, or increase respectively. Since projections will depend on assumptions about behavioral relationships and future values of critical variables, they should be used with caution.

Table 1:19

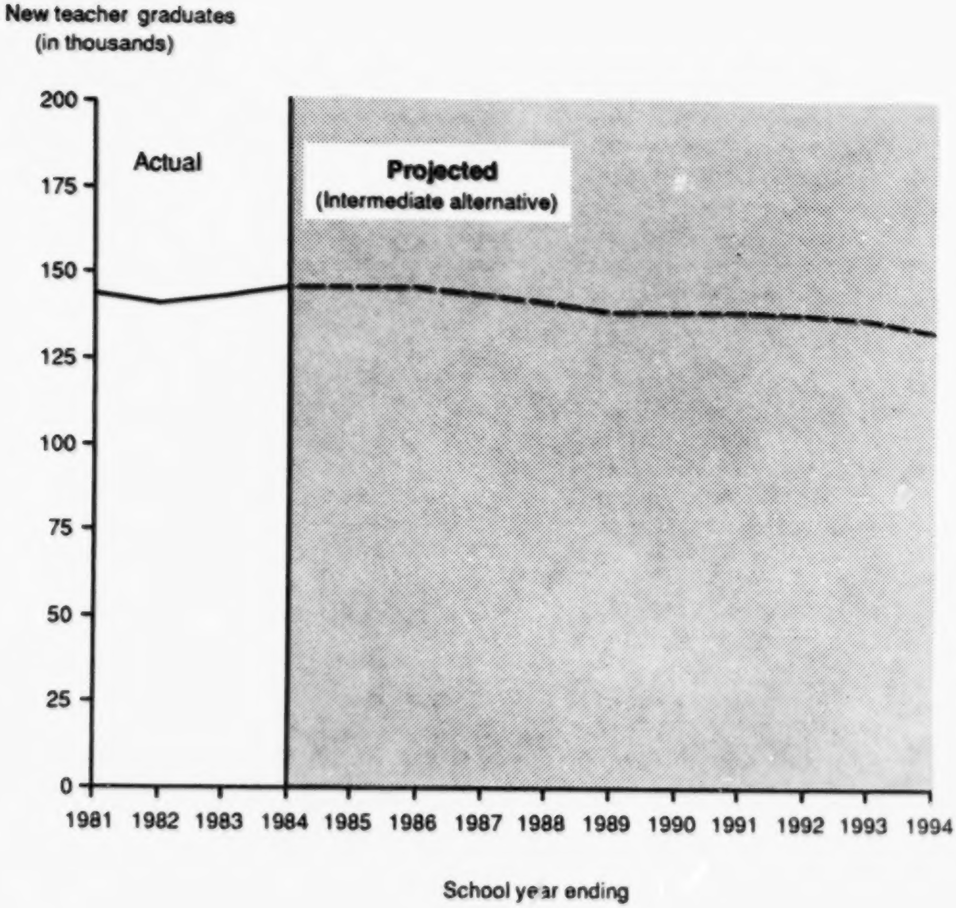
Trends in supply of new teacher graduates, with alternative projections: 1980–81 to 1993–94

Year	Supply of new teacher graduates (In thousands)
1980–81	144
1981–82	141
1982–83	143
1983–84	146

Year	Alternative projections of new teacher graduates: Low	Intermediate	High
1984–85	126	146	160
1985–86	121	146	163
1986–87	115	144	165
1987–88	110	142	168
1988–89	107	139	171
1989–90	105	139	176
1990–91	102	139	181
1991–92	100	138	184
1992–93	99	137	188
1993–94	95	133	190

SOURCE: National Education Association. *Teacher Supply and Demand in Public Schools 1981–82*, 1983, copyrighted. Center for Statistics, unpublished tabulations.

CHART 1:19 -- Supply of new teacher graduates



SOURCES: Center for Statistics, Projections of Education Statistics. National Education Association, Teacher Supply and Demand in Public Schools, 1981-82.

- The supply of new teacher graduates is expected to decrease from 1986 into the early 1990's, portraying a moderate decline in numbers over recent years.

Test scores of teachers compared with other college graduates

Teacher quality is very difficult to assess. One of the few teacher characteristics that appears to correlate with student performance is the teacher's academic ability.[1] Historically, recruits to teaching have been drawn from among the least able college graduates, and the academic ability of teacher candidates declined through the 1970's, according to standardized test scores.[2]

This indicator reports on the performance of teachers and former teachers on cognitive tests taken in high school, and compares their performance to the average college graduate.[3] The indicator is related to the current education reform movement's concern with the quality of the American teaching force. In response, many States have proposed programs to attract more able recruits to the teaching force and to make teaching a more attractive career so these recruits will remain.

The data for this indicator are from the Center for Statistics' National Longitudinal Study of the High School Class of 1972 (NLS-72). While it is possible that the academic abilities of teachers beginning their careers more recently have changed, the NLS-72 contains the most recent national data available. The indicator contrasts the SAT scores and NLS-72 cognitive test scores of three groups of 1972 high school seniors: teachers who began teaching in the fall of 1976 or later and persisted in teaching through the fall of 1979; teachers who began teaching in the fall of 1976 or later and had changed careers by the fall of 1979; and all 4- and 5-year bachelor's degree recipients from the high school class of 1972.

The data suggest two important findings. First, both teachers who left teaching and teachers who stayed scored lower on standardized tests than the average college graduate. Second, teachers leaving the field early in their careers were no more skilled academically than their contemporaries who stayed in teaching. (The data apply only to teacher retention very early in the career; long-term career patterns may be different.)

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[1] Hanushek, E., "The Economics of Schooling: Production and Efficiency in Public Schools." *Journal of Economic Literature* 24 (September 1986).

[2] Sykes, G., "Teacher Preparation and the Teacher Workforce: Problems and Prospects for the 80's." *American Education* (19) 2 (March 1983):23-30.

[3] This expands upon and modifies the indicator reported in U.S. Department of Education, *Indicators of Education Status and Trends*, 1985.

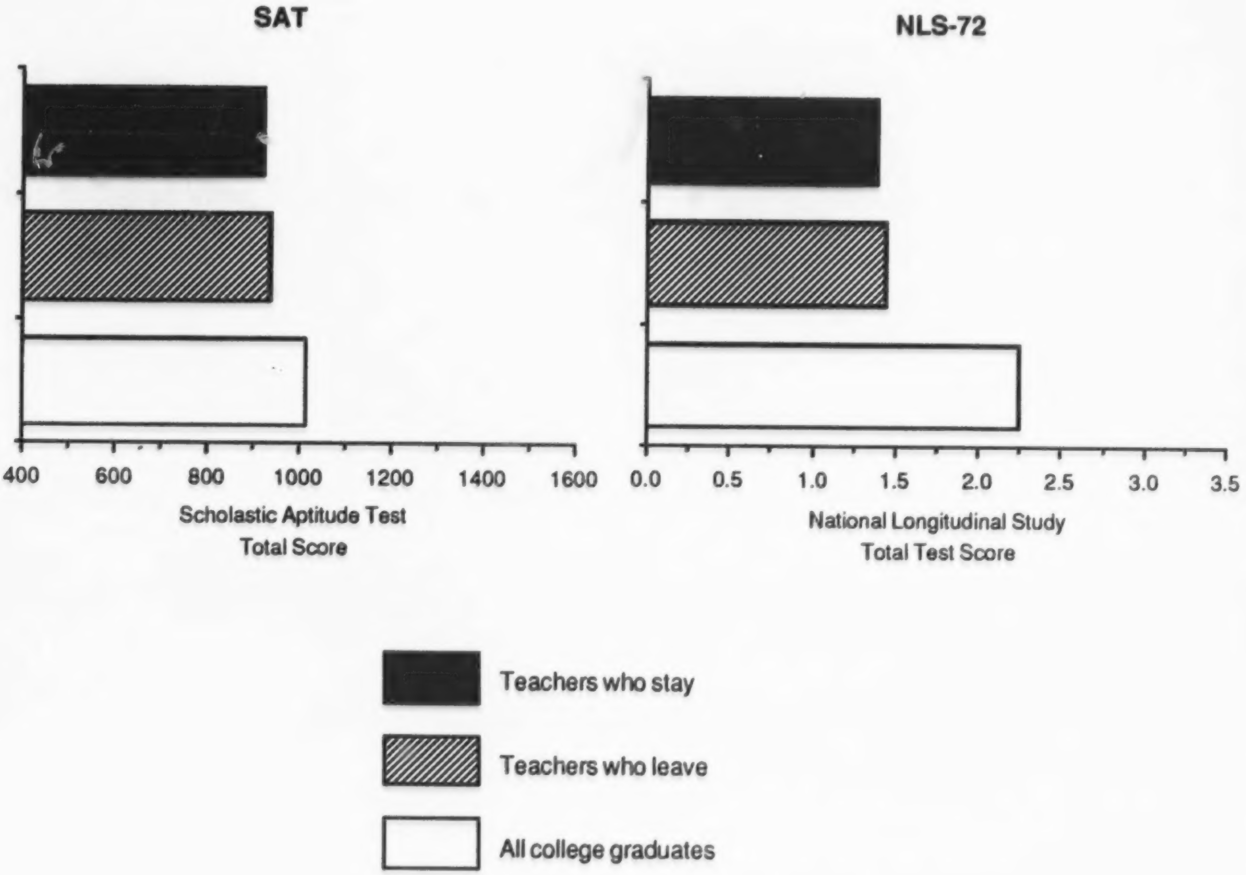
Table 1:20

Test scores of teachers and all college graduates

Performance measure	Teachers who stayed	Teachers who left	All college graduates
		Mean level of performance	
SAT (Total)	921.57	935.32	1011.80
NLS (Total test)	1.39	1.45	2.25

NOTE: Differences between teachers who stayed and teachers who left are not statistically significant.
SOURCE: Center for Statistics. National Longitudinal Study of the High School Class of 1972, unpublished tabulations.

CHART 1:20 -- Test scores of teachers and all college graduates



SOURCE: Center for Statistics, National Longitudinal Study, unpublished tabulations.

- Young teachers who leave teaching and young teachers who stay in teaching have similar levels of academic performance.
- The average college graduate scores better on standardized tests than both young teachers who leave and young teachers who stay in teaching.

Average annual salary of public school teachers

Reports of teacher shortages in selected specialties and the possibility of a general teacher shortage in the future have increased the perceived importance of teacher salaries as an incentive in attracting and retaining capable teachers. This indicator portrays average annual teacher salaries in public schools from 1960-61 to 1985-86 in both current and constant 1985-86 dollars.[1] Teacher salaries are reported by the States for regular elementary and secondary classroom teachers and are generally based on 9- or 10-month contracts.

Teacher salaries have begun to rise after a general decline during the 1970's. At that time, teacher beginning salaries were lower than those of most other fields requiring a bachelor's degree. Also, teacher salaries relative to other occupational salaries eroded during this period.

In response to recent education reform efforts, State governments have increased spending on education. Teacher salaries in some States had already been increased and raising salaries in order to attract more or better teachers came under consideration elsewhere. In recent years, average teacher salaries have risen more rapidly. According to the National Education Association, the national average for teacher salaries was $25,257 in 1985-86, and all States and the District of Columbia reported increases in average salaries over the previous year.[2] Between 1980-81 and 1984-85, teacher salaries have increased 33 percent in current dollars and 9 percent in constant 1984-85 dollars. For all workers with 4 years of college and over, the percentage increases were 18 percent and 5 percent, respectively.

A recent study by C. Emily Feistritzer examines earnings between teachers and U.S. workers on a daily basis.[3] Applying her methodology to the data in Table 1:21, the daily pay rate for public school teachers in 1984-85 calculated on the basis of 186 contract days (180 teaching days plus 6 nonteaching days) was $127. This compares to a 1984 daily earnings rate for all workers with 4 years of college or more of $131, calculated on the basis of an average work year of 240 days (5 days x 50 weeks less 10 days for holidays, assuming 2 weeks for vacation).

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[1] Teacher salaries do not include other earnings.

[2] National Education Association, *Estimates of School Statistics 1985-86*, 1986.

[3] Feistritzer, C.E., *Profile of Teachers in the U.S.*, National Center for Education Information, 1986.

Table 1:21

Estimated average annual salaries of classroom teachers in public elementary and secondary schools, by level: Selected years 1960–61 to 1985–86

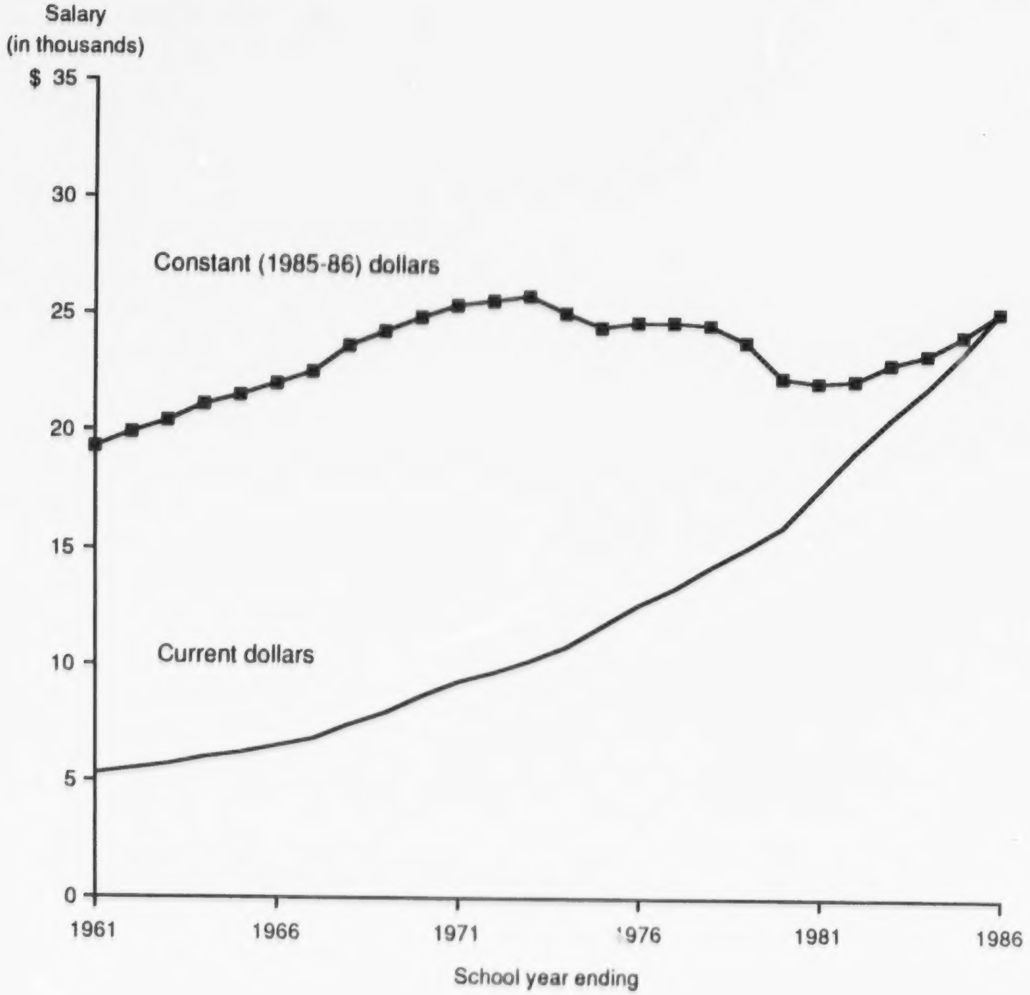
School year	Current dollars			Constant (1985–86) dollars[1]		
	All teachers	Elementary teachers	Secondary teachers	All teachers	Elementary teachers	Secondary teachers
1960–61	$5,275	$5,075	$5,543	$19,286	$18,555	$20,266
1961–62	5,515	5,340	5,775	19,958	19,325	20,899
1963–64	5,995	5,805	6,266	21,140	20,470	22,096
1965–66	6,485	6,279	6,761	22,099	21,397	23,040
1967–68	7,423	7,208	7,692	23,744	23,056	24,605
1969–70	8,635	8,412	8,891	24,878	24,236	25,616
1971–72	9,705	9,424	10,031	25,665	24,921	26,527
1973–74	10,778	10,507	11,077	25,146	24,514	25,844
1975–76	12,600	12,280	12,937	24,718	24,090	25,379
1977–78	14,198	13,845	14,603	24,668	24,055	25,372
1979–80	15,970	15,569	16,459	22,386	21,824	23,071
1980–81	17,644	17,230	18,142	22,169	21,649	22,794
1981–82	19,276	18,807	19,860	22,286	21,744	22,962
1982–83	20,700	20,207	21,322	22,946	22,400	23,636
1983–84	21,932	21,442	22,597	23,447	22,923	24,158
1984–85	23,534	23,117	24,290	24,217	23,788	24,995
1985–86	25,257	24,762	26,080	25,257	24,762	26,080

[1] Based on the Consumer Price Index, prepared by the U.S. Department of Labor, Bureau of Labor Statistics.

NOTE: Data for some recent years have been revised slightly since originally published.

SOURCE: National Education Association, *Estimates of School Statistics 1985–86*, 1986, copyrighted, and unpublished tabulations.

CHART 1:21 -- Average annual salary of teachers in public schools



SOURCE: National Education Association, Estimates of School Statistics, 1985-86.

- The average salary of public school teachers, when adjusted for inflation, declined in the 1970's but has risen slightly since then.

Teachers' earnings compared to other professional workers'

The issue of teacher quality demands serious consideration of compensation as a key element in attracting and holding more able teachers. The following tables and charts present teacher earnings (both salaries and compensation from other activities during a 12-month period) in the context of earnings by others. The first chart and table compare earnings between 1961 and 1981, based on the then current occupational classification (Bureau of the Census), while the second table and chart examine these earnings in 1984 based on the revised occupational classification. Comparisons are made between the total earnings of public and private school teachers and (1) other professionals as well as (2) workers whose jobs do not require a college degree. Distinctions are made between males and females in all fields since their earnings are significantly different.

These data, however, have limitations. For example, earnings shown are for 12 months, and it is not known to what extent earnings for teachers (who normally work under 9- or 10-month contracts) have been augmented by earnings from part-time jobs or summer employment.

Table 1:22A

Comparisons of earnings for individuals in teaching and in other selected occupations: 1961 and 1981

Occupation in longest job held during the year	Men		Women	
	1961	1981	1961	1981
	Earnings in constant 1981 dollars			
All full-time workers	$17,010	$20,260	$10,078	$12,001
Salaried professionals, total	22,437	25,350	14,903	16,558
Accountants	—	24,905	—	15,631
Health workers (except physicians and dentists)	—	16,631	—	16,827
Teachers (elementary and secondary schools)	19,792	20,249	15,888	16,056
Managers and administrators	21,211	25,425	10,370	14,820
Sales workers	18,305	22,331	7,269	11,238
Clerical workers	16,280	18,938	11,306	11,755
Craft workers	18,256	20,095	—	12,904
Factory workers	15,657	16,948	8,972	10,301

—Not available.

NOTE: These figures reflect occupational categories used by the Bureau of the Census up until 1981.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *Money Income of Households, Families, and Persons in the United States*, Series P-60. Nos. 39 and 137.

Table 1:22B

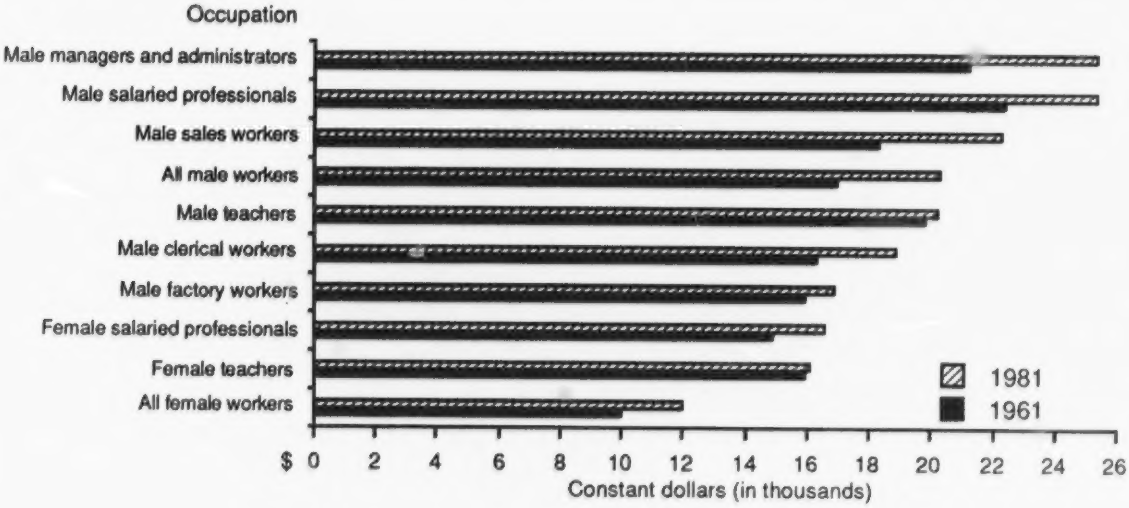
Comparisons of earnings for individuals in teaching and in other selected occupations: 1984

Occupation in longest job held during the year	Men	Women
	Earnings in current dollars	
All full-time workers	$23,218	$14,780
Professional specialty	31,423	20,899
Engineers	35,310	27,857
Natural scientists and mathematicians	31,932	24,659
Teachers, except postsecondary	25,031	20,280
Health assessment and treating (except diagnosing)	26,389	21,952
Executive, administrative, and managerial	32,157	18,860
accountants and auditors	30,327	19,273
Technical, sales, and administrative support	23,887	14,283
Administrative support, clerical	22,140	14,417
Precision production, craft and repair	22,580	13,777
Operators, fabricators, and laborers	18,632	11,852

NOTE: Based on the revised Bureau of the Census Occupational Classification System implemented in 1982.

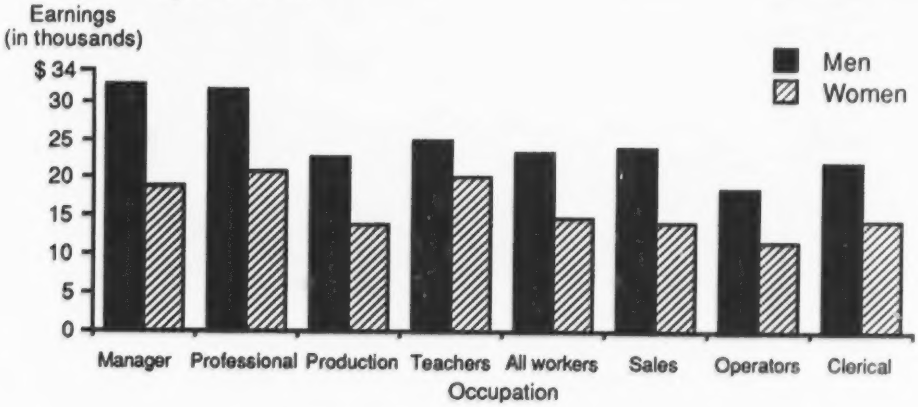
SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *Money Income of Households, Families, and Persons in the United States*, Series P-60, No. 151.

CHART 1:22A -- Earnings of teachers and individuals in other selected occupations, by sex (In 1981 constant dollars)



- Earnings for male teachers exceeded the average for all male full-time workers in 1961 but fell to just below that average by 1981.
- Earnings for female teachers were below the average for all male full-time workers in 1961 and dropped further by 1981 (26 percent below the male full-time worker'average).

CHART 1:22B -- Earnings of teachers and individuals in other selected occupations, by sex: 1984



SOURCE: U.S. Bureau of the Census, Current Population Reports.

- In 1984, earnings for male teachers exceeded the average earnings for male full-time workers but were below the earnings for male managers and professional workers.
- Earnings for female teachers lagged behind those for female professionals in 1984 but exceeded those for female full-time workers and sales workers.

C. Context: Student Characteristics

School enrollment rates by selected age groups

The proportion of students enrolled in school is not only a measure of school holding power, but also of other complex societal factors. Data presented in the accompanying table display enrollment rates for three age groups: 3- to 4-, 5- to 6-, and 16- to 17-year-olds. For more extensive data on enrollment by grade level see Table A9.

The enrollment of 3- to 4-year-old children has increased markedly in the last 20 years from 10 percent in 1964 to nearly 39 percent in 1985. Among 5- to 6-year-olds, enrollment increased from about 83 percent in 1964 to over 96 percent in 1985. The greatest increase occurred between 1964 and 1974; since then, the enrollment rate has remained fairly stable.

The increasing participation of women with children in the labor force is seen as a main contributor to these trends. There may be additional explanations including public enthusiasm for early childhood education, and the growing availability of nursery and kindergarten classes. See Pendleton (1986) for further discussion.[1]

The enrollment of 16- to 17-year-old youth has hovered around 90 percent since 1964. In 1964, the enrollment rate for this group was nearly 88 percent, and it increased slightly to almost 92 percent in 1985. The consistently high enrollment rates among 16- to 17-year-olds may reflect both compulsory school attendance laws in some States and the high value placed by this society on obtaining a high school education.[2]

A substantial number of those enrolled at ages 16 to 17 do not complete high school by the time they are 18 to 19. In 1984, 73.3 percent of 18- to 19-year-olds had completed high school. Another 11.5 percent were still enrolled in school below the college level.[3] In addition, approximately 7 to 8 percent of students leave high school between ages 16 to 17 and 18 to 19 without having received a diploma. See Pallas for further discussion of dropout and graduation rates.[4]

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[1] Pendleton, A., "Preschool Enrollment: Trends and Implications." *The Condition of Education, 1986 Edition*, U.S. Department of Education.

[2] 16- to 17-year-old enrollments include some enrolled in college, but do not include a small number who have already completed high school but are not enrolled in college.

[3] U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, Population Characteristics, School Enrollment, Social and Economic Characteristics of Students: October 1984 Advance Report*, November 1985.

[4] Pallas, A., "School Dropouts in the United States." *The Condition of Education, 1986 Edition*, U.S. Department of Education.

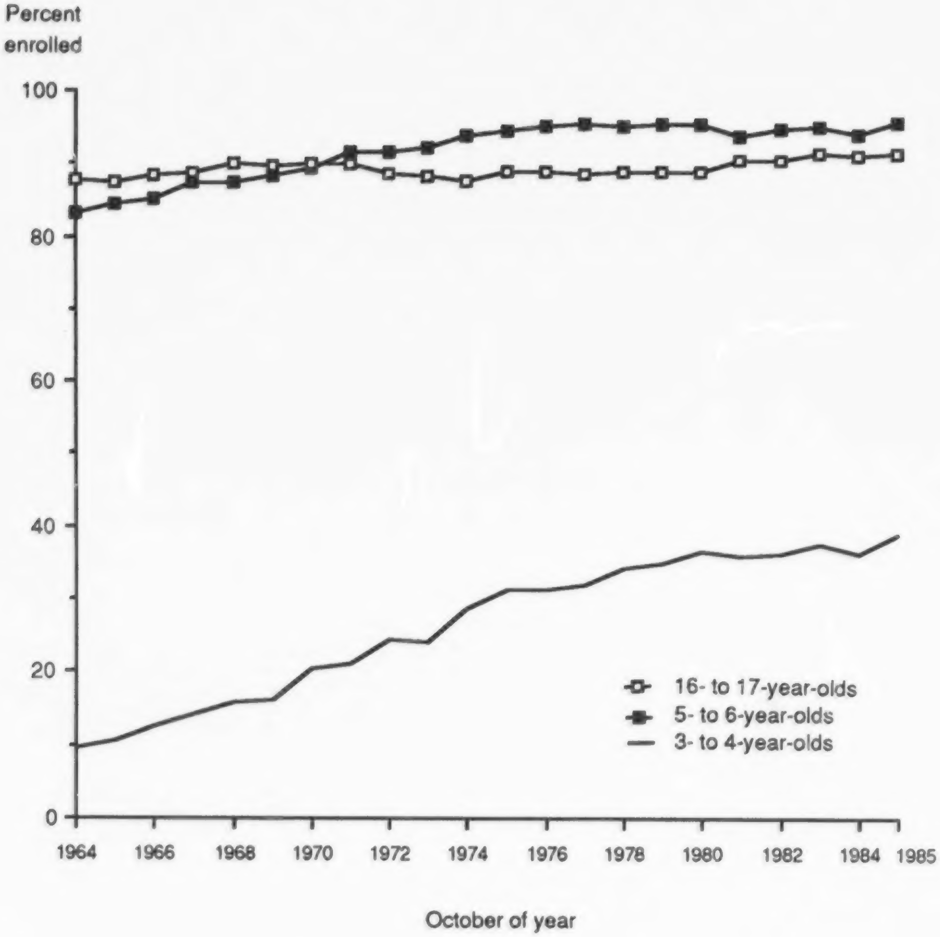
Table 1:23

School enrollment rates by selected age groups: 1964 to 1985

Year	3- to 4-year-olds	5- to 6-year-olds	16- to 17-year-olds	Year	3- to 4-year-olds	5- to 6-year-olds	16- to 17-year-olds
	Percentage of age group				Percentage of age group		
1964	9.5	83.3	87.7	1975	31.5	94.7	89.0
1965	10.6	84.4	87.4	1976	31.3	95.5	89.1
1966	12.5	85.1	88.5	1977	32.0	95.8	88.9
1967	14.2	87.4	88.8	1978	34.2	95.3	89.1
1968	15.7	87.6	90.2	1979	35.1	95.8	89.2
1969	16.1	88.4	89.7	1980	36.7	95.7	89.0
1970	20.5	89.5	90.0	1981	36.0	94.0	90.6
1971	21.2	91.6	90.2	1982	36.4	95.0	90.6
1972	24.4	91.7	88.9	1983	37.5	95.4	91.7
1973	24.2	92.5	88.3	1984	36.3	94.5	91.5
1974	28.8	94.2	87.9	1985	38.9	96.1	91.7

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P–20, *School Enrollment—Social and Economic Characteristics of Students*, various years, and unpublished tabulations.

CHART 1:23 -- School enrollment rates of selected age groups



SOURCE: U.S. Bureau of the Census, Current Population Reports.

- The most significant changes in school enrollment have been among 3- and 4-year-olds. From about 10 percent enrolled in the mid-1960's, the proportion reached nearly 39 percent in 1985.
- About 96 percent of 5- and 6-year-old children are enrolled in school. The greatest increase occurred between 1964 and 1974.
- Enrollment of 16- and 17-year-old youth has been approximately 90 percent for most of the period.

C. Context: Student Characteristics

Mobility of elementary and secondary schoolchildren

The population of the United States is geographically mobile. According to the last three decennial censuses, about 50 percent of children 5 to 14 years old had changed residences in the 5 years preceding the census. Nearly a third had moved within the same county. Such moves would not necessarily be disruptive if the child only moved within the same neighborhood or school district. However, many moves involve a different neighborhood or school, with all the disruptive consequences of losing old friends and adjusting to new surroundings, both in and out of school. Ten percent of the children had moved from a different county in the same State, and an additional 10 percent had come from a different State.

The geographic mobility of school-aged children affects school districts. Moves can contribute to pressures for school closings in the old neighborhood and demand for additional schools, teachers, and other resources in the new one.

The measure of geographic mobility presented here is limited in that it reflects where children have moved to, and thus measures gross migration into a State or region, but it does not assess the extent of migration out of an area or net migration levels.

The national rate of geographic mobility for the school-aged population has been reasonably stable over the last three censuses. However, there is considerable variation in the rate of mobility across States and regions. In interpreting the rates of geographic mobility presented here, it is important to consider both the rate of mobility and the absolute number of migrants. Both the proportionate size of an increase (or decrease) and changes in absolute numbers can strain available resources. Further details on the extent of migration are included in Table A10.

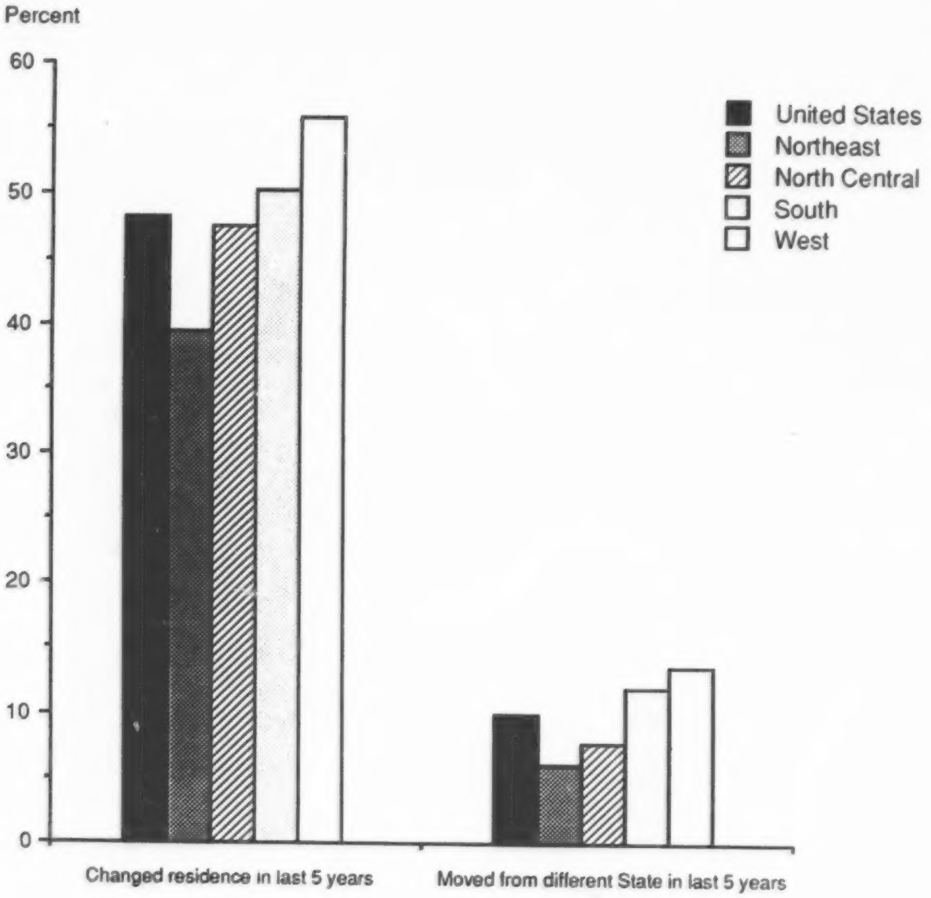
Table 1:24

Percentage of children 5 to 14 years old who changed residence between 1975 and 1980, by region and State of residence in 1980

Region and States	Total	From a different State
United States	48.2	9.9
Northeast	39.3	6.1
Connecticut	42.9	9.6
Maine	43.7	10.8
Massachusetts	38.2	5.9
New Hampshire	49.7	17.9
New Jersey	40.7	8.6
New York	38.2	3.3
Pennsylvania	37.8	5.7
Rhode Island	41.4	8.5
Vermont	43.6	12.1
South	50.2	11.9
Alabama	46.7	10.0
Arkansas	52.5	14.0
Delaware	44.4	12.8
District of Columbia	38.7	9.3
Florida	54.9	18.4
Georgia	50.8	11.4
Kentucky	50.1	9.6
Louisiana	45.2	8.5
Maryland	46.6	10.8
Mississippi	43.8	9.6
North Carolina	46.6	9.6
Oklahoma	59.2	16.5
South Carolina	44.7	11.0
Tennessee	51.1	11.5
Texas	53.4	11.0
Virginia	51.0	14.0
West Virginia	43.3	9.8
North Central	47.4	7.7
Illinois	46.5	6.3
Indiana	49.5	8.3
Iowa	46.6	8.9
Kansas	54.6	14.9
Michigan	45.8	5.6
Minnesota	43.7	7.5
Missouri	51.4	10.9
Nebraska	50.5	12.8
North Dakota	48.9	14.2
Ohio	47.7	6.3
South Dakota	49.3	12.6
Wisconsin	44.8	7.2
West	55.8	13.7
Alaska	63.8	27.7
Arizona	56.5	22.2
California	53.9	8.0
Colorado	61.6	21.3
Hawaii	45.1	14.4
Idaho	58.8	22.2
Montana	56.3	16.8
Nevada	64.1	30.6
New Mexico	49.6	18.1
Oregon	63.4	19.2
Utah	53.2	14.8
Washington	58.6	18.5
Wyoming	65.0	30.6

NOTE: Data are for children residing in the State designated in 1980 and who lived at a different residence 5 years prior.
SOURCE: U.S. Department of Commerce, Bureau of the Census, "Rates of Movement, Migration, and Interstate Migration among Children 5 to 14 Years Old, by State, 1960, 1970, and 1980," unpublished report, 1984.

CHART 1:24 -- Levels of geographic mobility of school-aged children: 1975 to 1980



SOURCE: Bureau of the Census.

- Approximately half of children age 5 to 14 changed residence between 1975 and 1980. Approximately 30 percent moved within the same county, almost 10 percent moved to a different county in the same State, and another 10 percent moved to a different State.
- Children who lived in the West in 1980 were most likely to have changed residence and those living in the Northeast were least likely to have changed residence in the preceding five years.

Aspects of the home environment and reading performance

In addition to assessing students' reading achievement, the National Assessment of Educational Progress (NAEP) asks students a number of background questions. Although the associations between the background variables and reading proficiency do not establish cause and effect, they may provide insights into the importance of specific features of the environment in the learning process.

One feature of the home environment relevant to student reading performance is the amount of reading material, such as books, newspapers, magazines, and encyclopedias, in the home. At all three ages, children from homes with an abundance of reading material have substantially higher average reading proficiency levels than children who have few such materials available.

Television is frequently cited as an influence that diverts children's attention from reading and school work, and this is corroborated by the NAEP data. Students who watch up to 2 hours of television per day have reading proficiency levels above average for their age group. But 6 or more hours per day spent watching television is related to lower reading proficiency for all three age groups. It is unlikely that television viewing lowers reading proficiency—poor readers may simply choose to watch more television. However, NAEP reported an increase in the proportion of children who watch a great deal of television, particularly at age 9, and a decrease in the availability of reading material in their homes. Further analysis of the data from the 1983-84 reading assessment revealed that time spent watching television was negatively correlated to the availability of reading materials in the home for students at all three ages. NAEP speculated that this may reflect a national trend toward less use of printed material and more reliance on other media, such as television, to obtain information or occupy leisure time.[1] See Table A1 for details on reading proficiency by the amount of reading material available in the home and by time spent watching television.

Combining the availability of reading materials in the home and the amount of time spent watching television into one indicator of the home environment underscores the association with reading proficiency at all three age levels. The average reading proficiency of students who both came from homes with few reading materials and who watched more than 6 hours of television per day is much lower than the mean reading proficiency of students who have many reading materials available at home and who watch up to 2 hours of television per day.

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[1] National Assessment of Educational Progress, *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report No. 15-R-01), 1985.

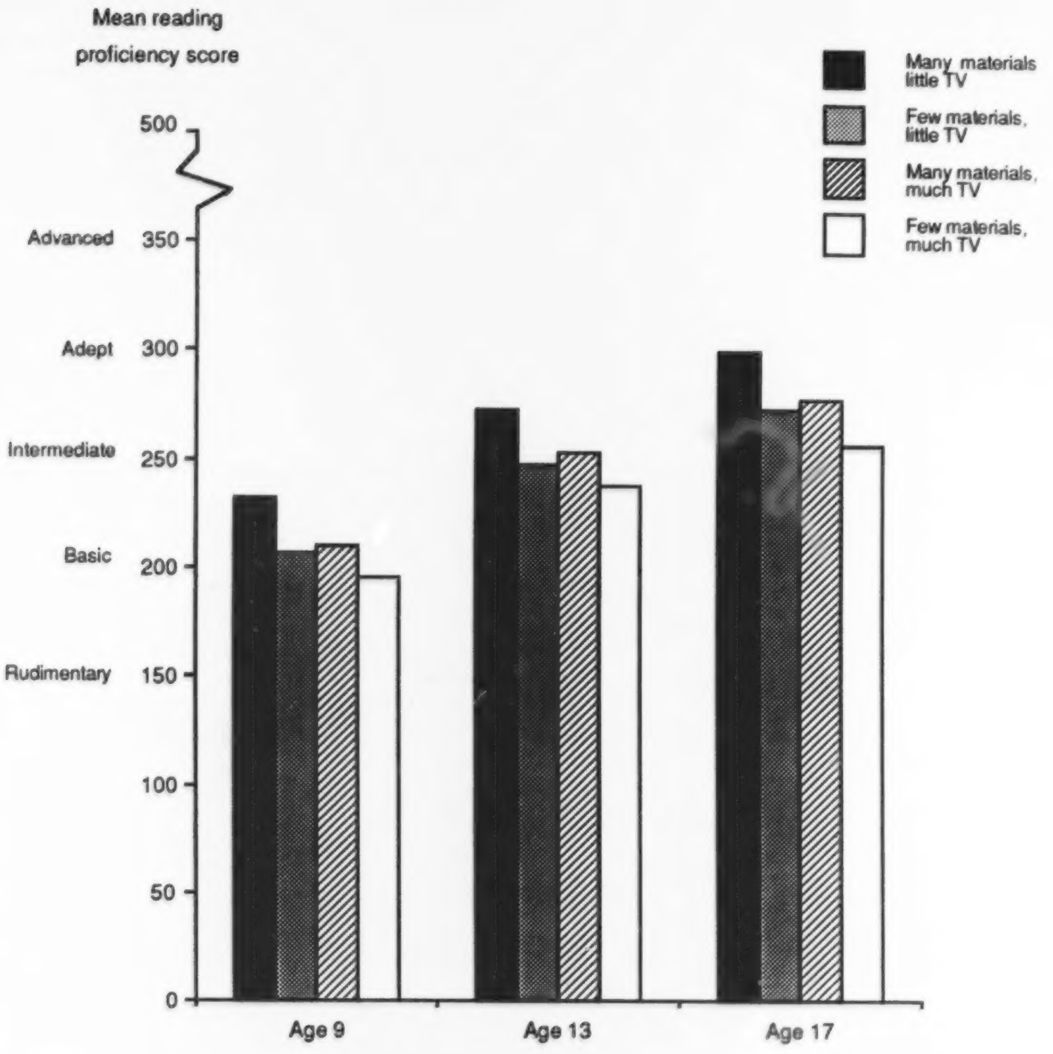
Table 1:25

Average reading proficiency of 9-, 13-, and 17-year-old students by reading materials in the home and television viewing: 1984

Age	Hours of television watched per day	Reading materials in the home: Few	Reading materials in the home: Many
		Reading proficiency means	
9	0–2 hours	206.2	231.5
	6+ hours	195.8	209.5
13	0–2 hours	247.3	272.9
	6+ hours	237.5	253.2
17	0–2 hours	273.1	299.9
	6+ hours	256.7	277.4

SOURCE: National Assessment of Educational Progress, 1983–84 Assessment of Reading. Tabulations by the Center for Statistics, 1986.

CHART 1:25 -- Correlates of reading proficiency: 1984



SOURCE: National Assessment of Educational Progress, tabulations by the Center for Statistics.

- Students from homes with many reading materials and who watched little television read much better than students from homes with few reading materials and who watched a great deal of television.

C. Context: Learning Environment

Disruptive behavior in public schools

Ideally, schools are places where teachers and students pursue education in a trouble-free, supportive environment. Unfortunately, school campuses are often subject to various types of disruptive behavior by students. Indeed, in recent years, violence, crime, and general misbehavior on school grounds have received much national attention both in and apart from the current educational reform movement.

Data from the U.S. Department of Education's 1985 Fast Response Survey System (FRSS) sample survey of public junior and senior high school principals address numerous aspects of student discipline and student behavior. The table below displays three types of student infractions: students caught selling illegal drugs at school, student reports of theft of personal items over $10 value, and law violations reported to police by school authorities.

Urban schools and large schools were more likely to have student infractions than rural schools and small schools. Reports of students selling drugs showed the largest differences among schools. Proportionately more senior high than junior high schools experienced drug selling on campus, but the difference was smaller than those by size and metropolitan status.

Principals were also asked about factors that limited their ability to maintain order in the school. Of a list of five factors, only the lack of alternative placements or programs for disruptive students was seen as a serious limitation to the school's ability to maintain order: 36 percent of principals indicated that this limited them greatly.

Note: For additional discussion, see U.S. Department of Health, Education, and Welfare, National Institute of Education, *Violent Schools—Safe Schools, The Safe Schools Study Report to the Congress*, Washington, DC, 1978.

Table 1:26

Incidence of selected student infractions in public secondary schools by selected school characteristics: 1983–84

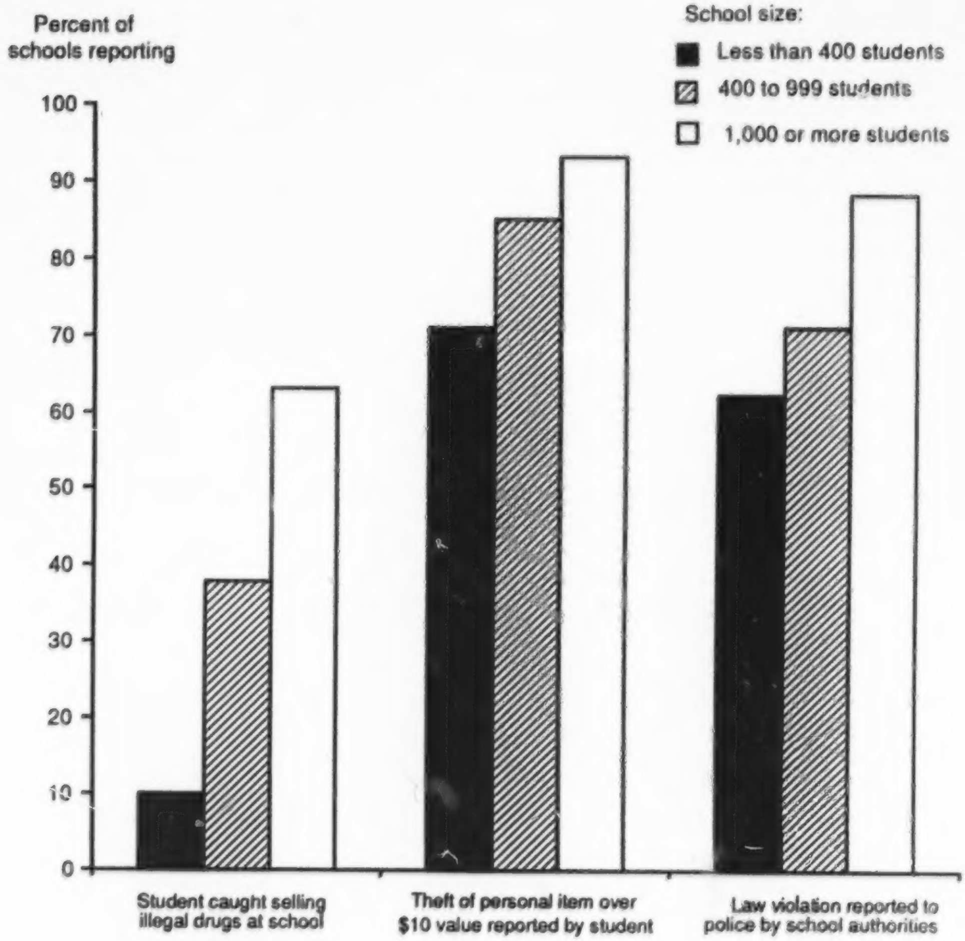
School characteristic	Student caught selling illegal drugs at school		Theft of personal item over $10 value reported by student		Law violations reported to police by school authorities	
	Percentage of schools	Incidence per 100 students[1]	Percentage of schools	Incidence per 100 students[1]	Percentage of schools	Incidence per 100 students[1]
Total	35	.2	82	1.2	72	.8
Grade level[2]						
Junior high	31	.2	80	.8	70	.7
Senior high	39	.2	84	1.4	75	.8
School size						
Less than 400	10	.2	71	1.7	62	1.0
400–999	38	.2	85	.9	71	.7
1000 or more	63	.2	93	1.1	88	.9
Metropolitan status						
Rural	21	.1	79	1.4	64	.7
Suburban	46	.2	84	1.0	76	.8
Urban	51	.5	89	1.3	88	1.5

[1] Based on all schools including those that reported no occurrences.

[2] Some schools have both elementary and secondary grades. These schools are not listed separately because their number is small; they are included in the total and in analyses with other school characteristics.

SOURCE: U.S. Department of Education, Center for Statistics, Fast Response Survey System, Survey of School Discipline Policies and Practices, 1985.

CHART 1:26 -- Student infractions in public secondary schools: 1984



SOURCE: Center for Statistics, Survey of School Discipline Policies and Practices.

- More than one-third of public junior and senior high school principals reported that at least one student was caught selling illegal drugs at school during the 1983-84 school year. Large schools were six times as likely to have caught students selling drugs than small schools (63 and 10 percent respectively).

- The majority of public junior and senior high school principals, in schools of all sizes, reported that there had been thefts of personal items reported by students and law violations reported to the police by school authorities.

C. Context: Learning Environment

Student drug and alcohol abuse

Drug and alcohol abuse by American students has been identified as an important education indicator because of its prevalence and the serious consequences of this health- and life-threatening practice. An annual study by the National Institute on Drug Abuse, begun in 1975, has asked high school seniors to identify the current magnitude of the problem. There are several ways to gauge the extent of drug and alcohol use including lifetime, annual, and monthly. Each tells a different but related story. The first two categories indicate prevalence of the substance, and by implication, its accessibility. The third category indicates the proportion of students involved during a relatively short span of time and includes regular, occasional, and new drug users. The data show that by the time they are high school seniors, nearly two-thirds (61 percent) have tried an illicit drug. Because of the rise in its usage over the decade, data on cocaine use are highlighted in the table below.

Acquaintance with licit and illicit substances generally begins in adolescence and increasingly, at even younger ages. For many substances, usage continues and increases into adulthood. On the individual level, the impairment due to drugs or alcohol is a personal and family tragedy. Learning is a cognitive process and drugs—whether sedatives, hallucinogens, or stimulants—interfere with cognition and lower academic achievement. In terms of environment, neighborhoods near schools often are magnets for drug dealers, who can be students themselves. Crimes of violence and casualties may accompany or result from substance abuse. In these circumstances, school efficacy and student achievement, not limited only to the abusers, can suffer. Nationally, millions of dollars are spent to combat drug abuse and related crimes and to rehabilitate individuals who have become chemically dependent.

Table 1:27

Trends in the prevalence of student drug and alcohol use: Percentage of high school seniors using substances in different time periods: 1975 to 1985

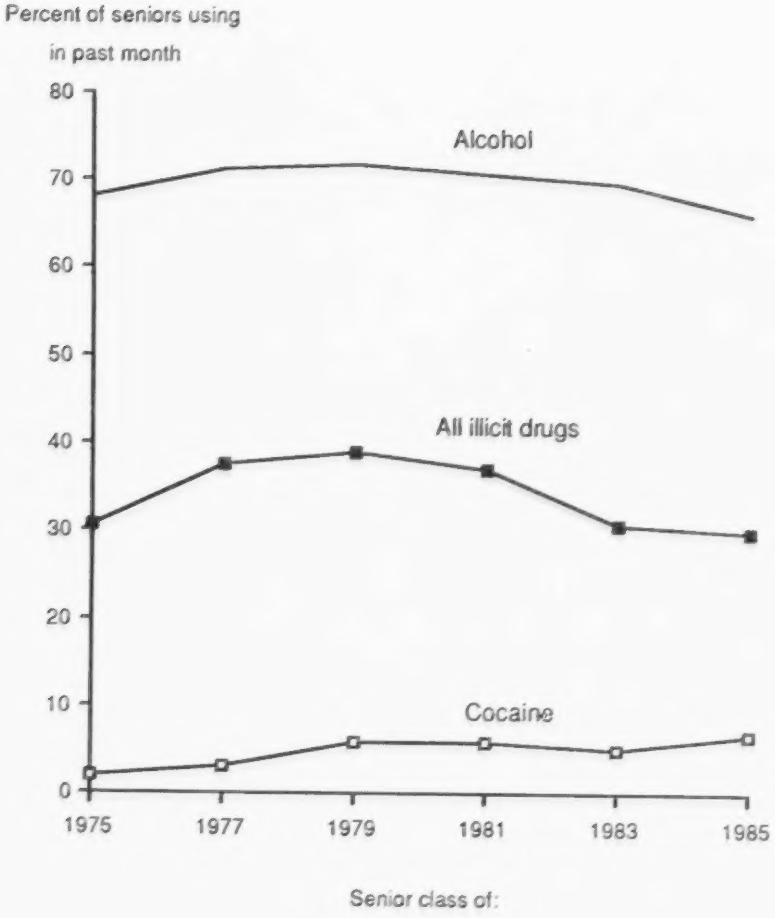
	Class of:											
	1975	1977	1979	1981	1983	1985	1975	1977	1979	1981	1983	1985
	Percentage who ever used						Percentage who used in the last 12 months					
All illicit drugs[1]	55.2	61.6	65.1	65.6	62.9	60.6	45.0	51.1	54.2	52.1	47.4	46.3
Cocaine	9.0	10.8	15.4	16.5	16.2	17.3	5.6	7.2	12.0	12.4	11.4	13.1
Alcohol	90.4	92.5	93.0	92.6	92.6	92.2	84.8	87.0	88.1	87.0	87.3	85.6

	Class of:					
	1975	1977	1979	1981	1983	1985
	Percentage who used in the last 30 days					
All illicit drugs[1]	30.7	37.6	39.0	36.9	30.5	29.7
Cocaine	1.9	2.9	5.7	5.8	4.9	6.7
Alcohol	68.2	71.2	71.8	70.7	69.4	65.9

[1] Includes marijuana, hallucinogens, cocaine, heroin, and other opiates, stimulants, sedatives, or tranquilizers not under a doctor's orders.

SOURCE: Johnston, L.D., O'Malley, P.M., and Bachman, J.G. *Drug Use Among American High School Students, College Students, and Other Young Adults*, U.S. Department of Health and Human Services, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse (# 86–1450), 1986.

CHART 1:27 -- Trends in the use of selected licit and illicit substances by high school seniors



SOURCE: National Institute on Drug Abuse, Drug Use Among American High School Students, College Students, and Other Young Adults, 1986.

- Cocaine use among high school seniors has more than tripled since 1975. In 1985, almost one out of every 15 high school seniors reported using cocaine in the past month.
- While alcohol usage has declined slightly over the decade, rates remain high. Nearly 2 in every 3 seniors reported using alcohol in the month preceding the survey.

C. Context: Learning Environment

School climate in public and Catholic high schools

The effective schools research literature suggests that schools with positive school climates are more effective at promoting the academic success of their students. Most research on school climate and effective schools has focused on elementary schools. This indicator applies the effective schools model to American high schools.

While the details of what constitutes a positive school climate vary from one study to the next, there is some agreement. Some of the components of climate frequently identified in effective schools research are strong principal leadership; a safe, orderly environment with a minimum of classroom disruption; high teacher morale; collegiality and cooperation among staff members; and teacher control over school and classroom policy.

The data below show differences among public and Catholic high school teachers in their reports of school climate, along the climate components noted above. For most aspects of climate, a majority of the teachers in both public and Catholic high schools report positive school climates. Catholic high school teachers, however, are considerably more likely to report a positive school climate than are public high school teachers, for each of the reported dimensions.

On average, students in the Catholic high schools surveyed are stronger academically to begin with than their public school peers, and are likely to come from more advantaged backgrounds.[1] Some of the climate differences between public and Catholic high schools seem to be due to these differences. The presence of academically talented and highly motivated students in the school may facilitate the development of effective learning environments. The remaining public-Catholic differences in school climate, however, cannot be attributed to the student mix, and may be due to public-Catholic differences in school functioning. One potentially important difference is that Catholic high school principals report greater control over policy and personnel than do public high school principals.[2]

Details on how the school climate components were derived and analyzed may be found in Appendix C.

Table 1:28

School climate in public and Catholic high schools: 1984

Components of climate	Public school teachers	Catholic school teachers
	Percentage reporting positive school climate	
Principal leadership	49.8	59.1
Staff cooperation	52.4	67.9
Student behavior	39.4	72.9
Teacher control over school and classroom policy	65.9	81.1
Teacher morale	74.1	84.8

SOURCE: National Institute of Education, Consortium for the Study of Effective Schools, High School and Beyond Administrator and Teacher Survey, 1984.

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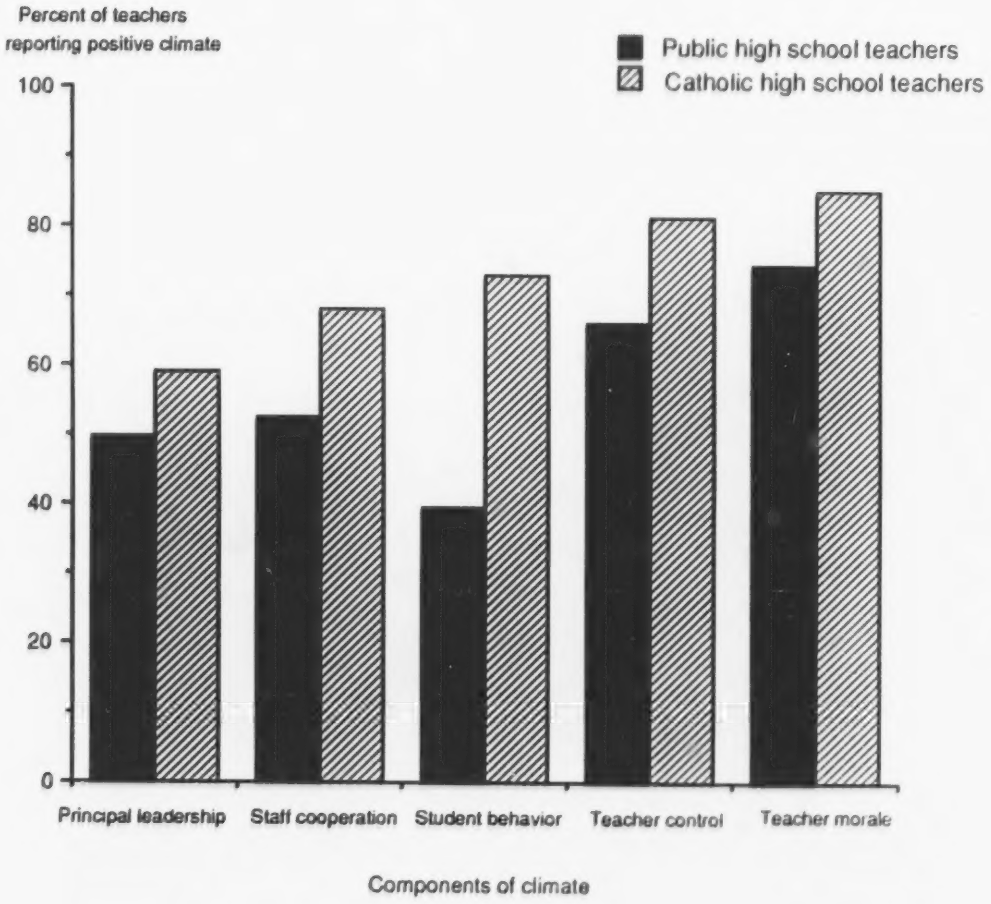
[1] Pallas, A.M., "School Climate in American High Schools." U.S. Department of Education, Center for Statistics, unpublished paper, 1986.

[2] Chubb, J.E., and Moe, T.M., "Politics, Markets, and the Organization of Schools." Paper presented at the Annual Meeting of the American Political Science Association. New Orleans, August 28-September 1, 1985.

CHART 1:28 -- School climate in public and Catholic high schools: 1984



SOURCE: High School and Beyond Administrator and Teacher Survey, Center for Statistics analysis.

- Catholic high school teachers report higher levels of principal leadership, staff cooperation, student behavior, control over school policy and morale than do public high school teachers.
- Of all of the components of school climate, public high school teachers give student behavior the lowest rating. Catholic high school teachers report fewer problems with student behavior than do public high school teachers.
- On average, morale is quite high among public and Catholic high school teachers.

C. Context: Learning Environment

Teachers' job satisfaction

The core of any school is the teaching staff. Without a well-qualified and motivated teaching staff, no school can hope to reach for excellence. The evidence on teacher job satisfaction has been variable as documented in a number of surveys and studies in recent years.[1] The Metropolitan Life Survey of the American Teacher, conducted in June 1985, found that 79 percent of public school teachers were somewhat satisfied or very satisfied with teaching as a career while 21 percent expressed some degree of dissatisfaction.

On the other hand, the same survey, conducted a year earlier, showed that the majority of public school teachers would not advise a young person to pursue a career in teaching (53 percent). Only 47 percent agreed that they felt respected as a teacher in today's society.

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[1] See "How Teachers Grade Our Schools," *Parade*, December 1, 1985; National Education Association, *Status of the American Public School Teacher*, December 1981 and *Nationwide Teacher Opinion Poll*, 1981, 1982, and 1983; and Feistritzer, C.E., *Profile of Teachers in the U.S.*, National Center for Education Information, 1986.

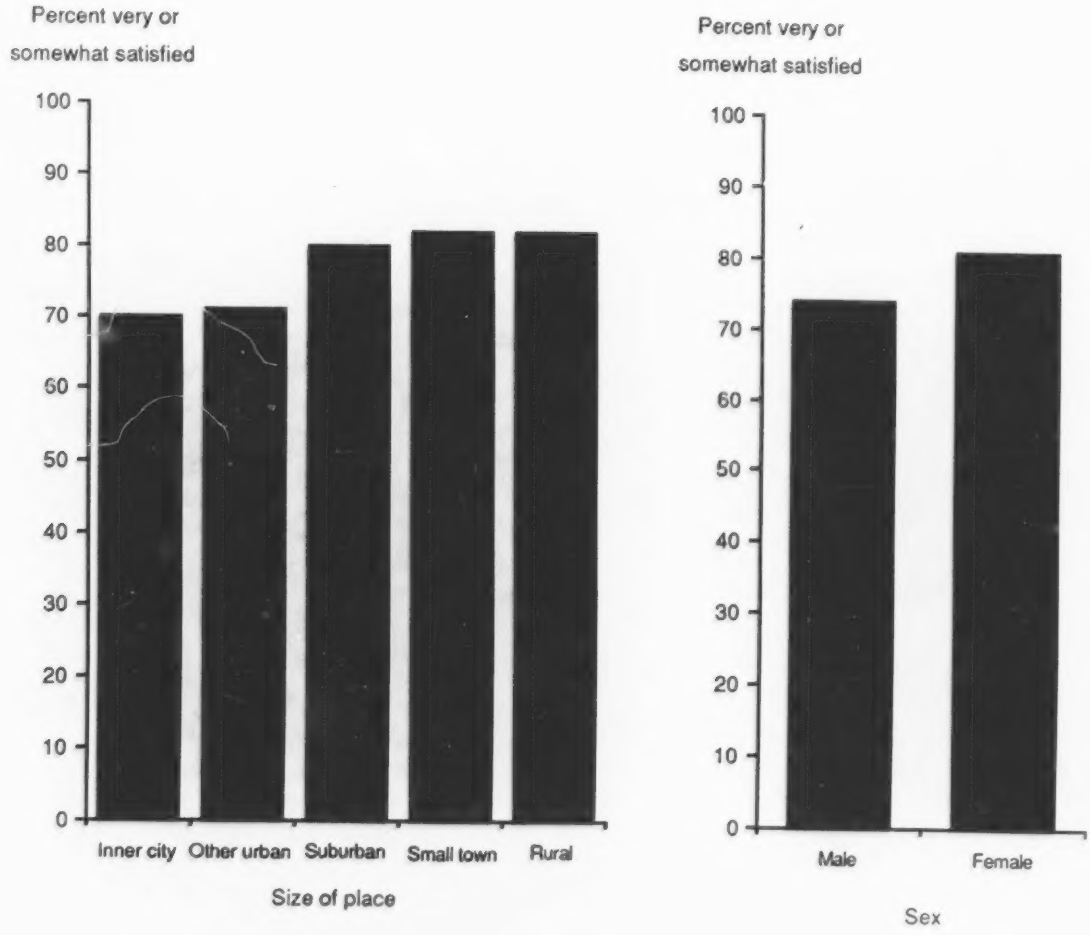
Table 1:29

Percentage of teachers satisfied with teaching as a career: 1985

	Very satisfied	Somewhat satisfied	Somewhat dissatisfied	Very dissatisfied
Total	44	35	16	5
Region				
East	42	37	16	5
Midwest	53	34	10	3
South	37	36	20	6
West	46	33	18	3
Size of place				
Inner City	40	30	19	11
Other urban	36	35	23	6
Suburb	45	35	16	3
Small town	46	36	14	4
Rural	45	37	13	4
Level of school				
Elementary	49	32	14	3
Junior high	37	39	17	7
High school	37	39	19	6
Sex				
Male	34	40	18	8
Female	48	33	15	3

SOURCE: Metropolitan Life Insurance Company and Louis Harris and Associates, *The American Teacher, 1985*, 1985.

CHART 1:29 -- Satisfaction with teaching as a career: 1985



SOURCE: Metropolitan Life Insurance Company and Louis Harris and Associates, The American Teacher

- Teachers in suburbs, small towns, and rural areas are more satisfied with teaching as a career than teachers in urban areas.
- Female teachers are more satisfied with teaching as a career than male teachers.

Goals of education as seen by teachers and the general public

Consensus on goals is important in an educational system dependent on public support. The *Gallup Poll* surveys in 1984 asked teachers and the general public to rate the importance of certain goals of education on a scale of zero to 10. The results indicate that while there is general agreement concerning broad purposes, there are areas where teachers and the general public do not concur. Presented here are a sample of the goals the respondents were asked to rate. The percentages shown represent the proportion of respondents giving the goal the "highest rating" (10).

There are two goal areas in which the general public and teachers disagree. The first concerns vocational goals, "to develop an understanding about different jobs and careers including their requirements and rewards," and "to help students get good high-paying jobs." Much of the public finds these goals equally important with other, more academically oriented goals, such as developing the ability to write, speak, think, etc. Teachers, however, downplay the importance of vocational goals relative to the goals of developing writing and thinking skills.

The other area where there is disagreement between teachers and the general public is in the goal "to develop standards of right and wrong." While only a third of all teachers gave this goal the highest rating, nearly two-thirds of the general public did so.

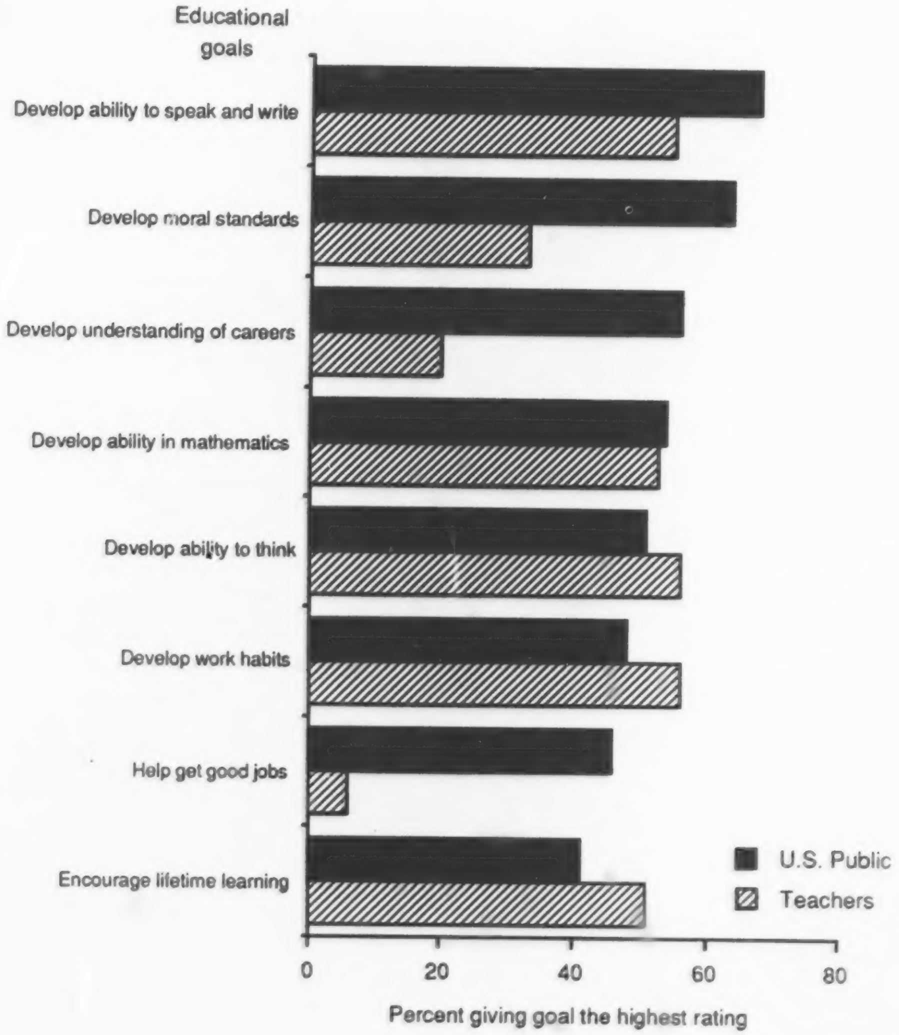
Table 1:30

The perceived importance by the public and teachers of selected goals of education: 1984

Goal	U.S. public	Teachers
	Percentage giving highest rating	
To develop the ability to speak and write correctly	68	55
To develop standards of what is "right and wrong"	64	33
To develop an understanding about different kinds of jobs and careers, including their requirements and rewards	56	20
To develop the ability to use mathematics for everyday problems	54	53
To develop the ability to think creatively, objectively, analytically	51	56
To help develop good work habits, the ability to organize one's thoughts, the ability to concentrate	48	56
To help students get good/high-paying jobs	46	6
To encourage the desire to continue learning throughout one's life	41	51

SOURCE: *Phi Delta Kappan*, The Gallup Poll of Teachers' Attitudes Toward the Public Schools, January 1985.

CHART 1:30 -- Perceived importance of selected educational goals: 1984



SOURCE: Phi Delta Kappan, The Gallup Poll of Teachers' Attitudes Toward the Public Schools.

- The highest rated goal of the general public is "to develop the ability to speak and write correctly."
- Teachers give high, virtually equal, ratings to goals dealing with basic academic and analytical skills.
- The public rates as highly important two vocational goals to which teachers assign low priority --- "help get good jobs" and "develop understanding of careers."
- Nearly two-thirds of the public (64 percent) said developing standards of right and wrong were important. Only half as many teachers gave this goal the highest rating.

C. Context: Perceptions

School problems as seen by teachers and the public

Polls of the opinions of teachers and the general public alert decisionmakers to probable reactions to a variety of school programs and policies. However, the *Gallup Poll of Teachers' Attitudes Toward the Public Schools* found that the attitudes of teachers and the public are frequently at odds. The question asked was, "What do you think are the biggest problems with which the public schools in this community must deal?"

The results indicate that the problem most cited by teachers, "parents' lack of interest," was one of the problems least cited by the public. On the other hand, 3.5 times as many members of the public as teachers thought that "difficulty getting good teachers" was a major problem. Also the public sees the use of drugs as a major problem in the public schools whereas teachers generally do not.

There was general agreement between teachers and the public in two areas. They both cited "lack of proper financial support" and "lack of discipline" as major problems. But even here there were significant differences in the two groups.

Table 1:31

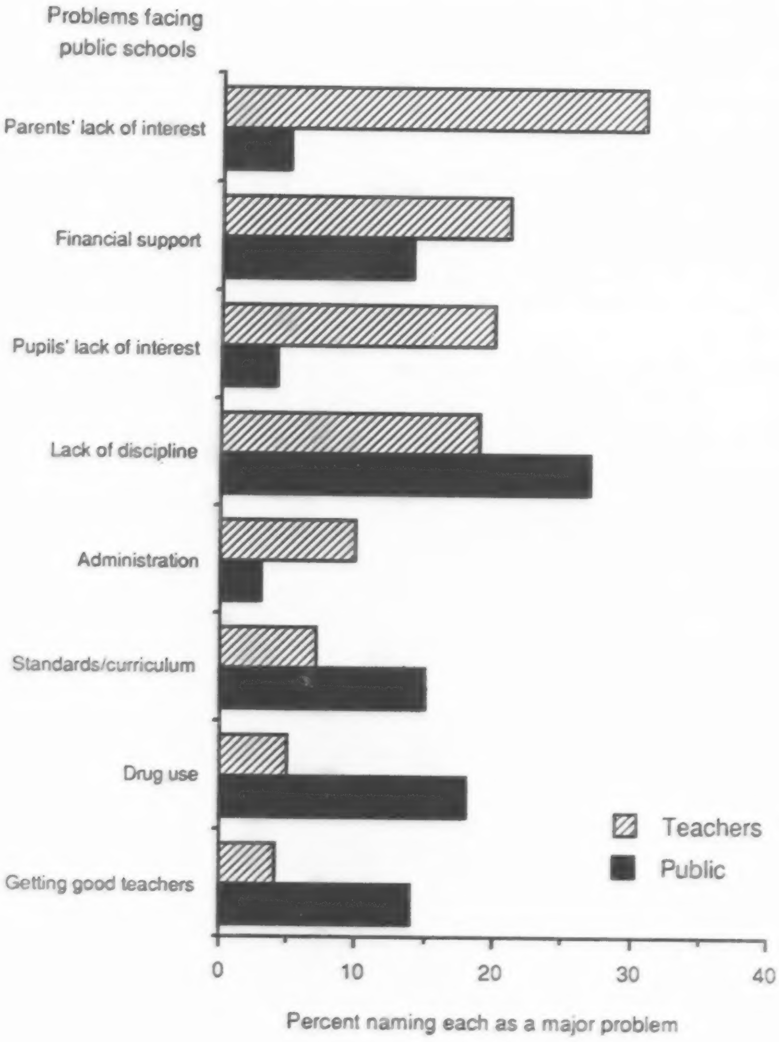
Percentage of teachers and the general public naming selected issues as a major problem facing the public schools: 1984

Problem	All teachers	Elementary teachers	High school teachers	U.S. public
	Percentage naming as a major problem			
Parents' lack of interest/support	31	35	26	5
Lack of proper financial support	21	20	21	14
Pupils' lack of interest/truancy	20	17	23	4
Lack of discipline	19	20	18	27
Problems with administration	10	8	12	3
Poor curriculum/poor standards	7	7	7	15
Use of drugs	5	3	6	18
Low teacher salaries	5	5	5	4
Difficulty getting good teachers	4	3	4	14
Large schools/overcrowding	4	5	2	4
Teachers' lack of interest	4	5	4	5
Integration/busing	2	2	2	6

NOTE: Fewer than 5 percent listed any other problem as major.

SOURCE: *Phi Delta Kappan*, The Gallup Poll of Teachers' Attitudes Toward the Public Schools, October 1984.

CHART 1:31 -- Teachers' and the public's perceptions of the biggest problems facing public schools: 1984



SOURCE: Phi Delta Kappan, The Gallup Poll of Teachers' Attitudes Toward the Public Schools.

- Nearly a third of all teachers thought that lack of parental interest was a major problem facing the public schools. Only 5 percent of the general public shared that view.
- The general public was more than three times as likely as teachers to feel that drug use was a major problem in the public schools.

C. Context: Perceptions

Public opinion ratings of schools and other national institutions

The public schools are dependent on public support in a number of ways. Opinion polls of the public's perception of the schools are good gauges of the strength of that support. The annual *Gallup Poll of the Public's Attitudes toward the Public Schools* provides data on the public's ratings of the schools. This poll has become a kind of national barometer, which is closely watched and debated each year by educators and policymakers across the Nation. For example, the National Commission on Excellence in Education, established by the Secretary of Education in 1982, cited findings from the *Gallup Poll* in its 1983 report, *A Nation at Risk.*

Since 1977 the poll has asked respondents their opinion of the school in their community and since 1981 the poll has also asked respondents their opinion of schools generally in the Nation.

Not surprisingly, the schools of which the public has the greatest knowledge, the local schools, have consistently had higher marks than schools in general. Still the public only rates the local schools with an average grade of C+.

These ratings are better understood in the social climate of the time. *The Gallup Report* presents data comparing the public's confidence in a variety of national institutions, thus putting the public's assessment of schools in relationship with their ratings of other institutions. The public's confidence in many institutions has recently been relatively low. Seen in the context of the public's attitude toward other institutions, the schools have not fared badly, ranking just above the median in the ratings of the listed institutions.

Table 1:32A

The public's rating of the schools: Percentage giving the schools an A, B, C, D, or F

	Rating of local schools							Rating of the Nation's schools						
Year	A	B	C	D	F	Don't know	Average grade	A	B	C	D	F	Don't know	Average grade
1977	11	26	28	11	5	19	2.33	—	—	—	—	—	—	—
1978	9	27	30	11	8	15	2.21	—	—	—	—	—	—	—
1979	8	26	30	11	7	18	2.21	—	—	—	—	—	—	—
1980	10	25	29	12	6	18	2.26	—	—	—	—	—	—	—
1981	9	27	34	13	7	10	2.20	2	18	43	15	6	16	1.94
1982	8	29	33	14	5	11	2.24	2	20	44	15	4	15	2.01
1983	6	25	32	13	7	17	2.12	2	17	38	16	6	21	1.91
1984	10	32	35	11	4	8	2.36	2	23	49	11	4	11	2.09
1985	9	34	30	10	4	13	2.39	3	24	43	12	3	15	2.14

—Not available.
SOURCE: *Phi Delta Kappan*, The 17th Annual Gallup Poll of the Public's Attitudes Toward the Public Schools, 1985.

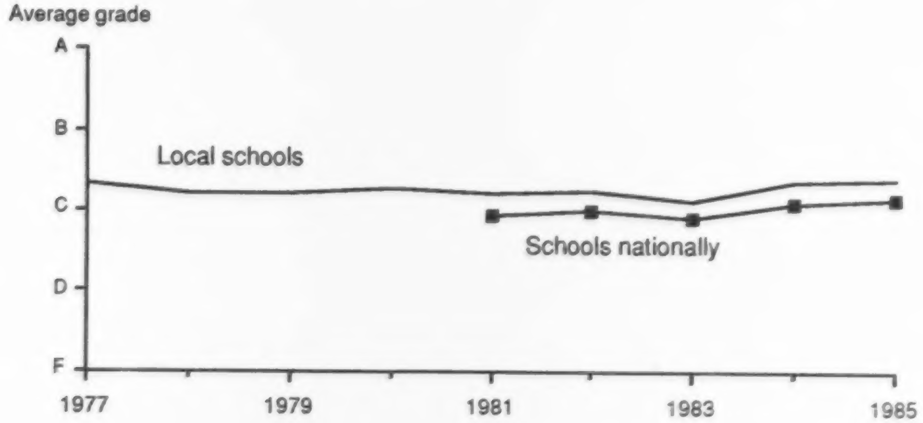
Table 1:32B

The public's confidence in selected institutions: The percentage having a "great deal" or "quite a lot" of confidence

	1973	1975	1977	1979	1981	1983	1985
Institution	Percentage reporting substantial confidence in the institution						
Church	66	68	65	65	64	62	66
Military	—	58	57	54	50	53	61
Supreme Court	44	49	46	45	46	42	56
Banks	—	—	—	60	46	51	51
Schools	58	—	54	53	42	39	48
Congress	42	40	40	34	29	28	39
Newspapers	39	—	—	51	35	38	35
Big business	26	34	33	32	20	28	31
Television	37	—	—	38	25	25	29
Labor	30	38	39	36	28	26	28

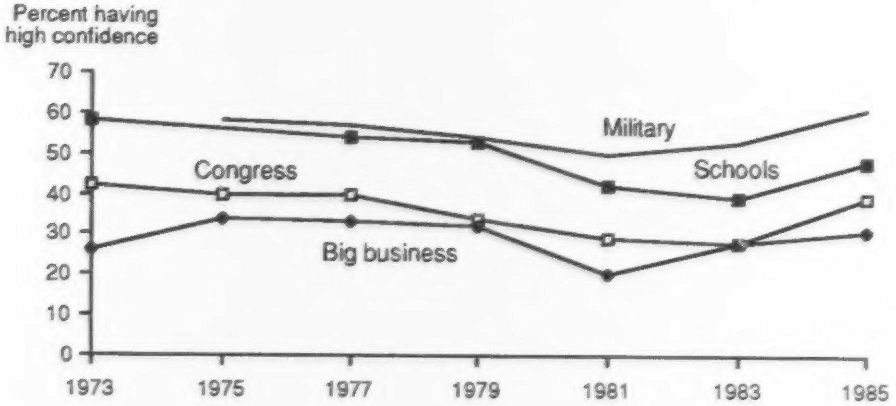
—Not available.
SOURCE: George Gallup, Inc., "Confidence in Institutions Trend," *The Gallup Report*, July 1985.

CHART 1:32A -- Ratings of the public schools



SOURCE: Phi Delta Kappan, The 17th Annual Gallup Poll of the Public's Attitudes Toward The Public Schools.

CHART 1:32B -- The public's confidence in selected national institutions



SOURCE: The Gallup Report.

- Respondents give the schools in their own community higher marks than they give the public schools nationally, a C+ for the local schools but only a C for schools nationally.
- While the public's confidence in the schools slipped during the late 1970's and early 1980's, its confidence in many institutions also declined.
- The public's confidence in schools, along with other institutions, has risen recently.

C. Context: State Governance

State high school graduation requirements in basic subjects

One of the major recommendations of the National Commission on Excellence in Education was that "State and local high school graduation requirements be strengthened. . . ." While the States had been increasing high school graduation requirements before the publication of *A Nation At Risk,* the Commission's report created a climate of public opinion in which States could more easily enact their education agendas.

Since *A Nation At Risk,* there has been much activity by State legislatures, boards, and departments of education to toughen the standards in their systems. Of course, State-mandated standards are not a direct measure of what happens in the classroom, but they can serve as an important indicator of intent to improve those aspects of schooling over which State policy officials exercise some control.

In 1985, 46 States had established a minimum number of units required for high school graduation. Of these, 39 States had increased the number of units required for high school graduation between 1980 and 1985. See Table A11 for State-by-State details.

The following data present changes in the average number of Carnegie units (1-year-courses) required in basic subjects in order to graduate from high school, and the number of States involved.

While the State role in mandating requirements has grown somewhat in recent years, the responsibility for implementing such requirements remains at the local level.[1] Moreover, many States have strong traditions of local control in education and local requirements vary from and may even surpass State requirements.

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[1] For a major statement on State and local roles in the next stage of education reform, see *Time for Results: The Governor's 1991 Report on Education.* The National Governor's Association, Washington, DC, August 1986.

Table 1:33

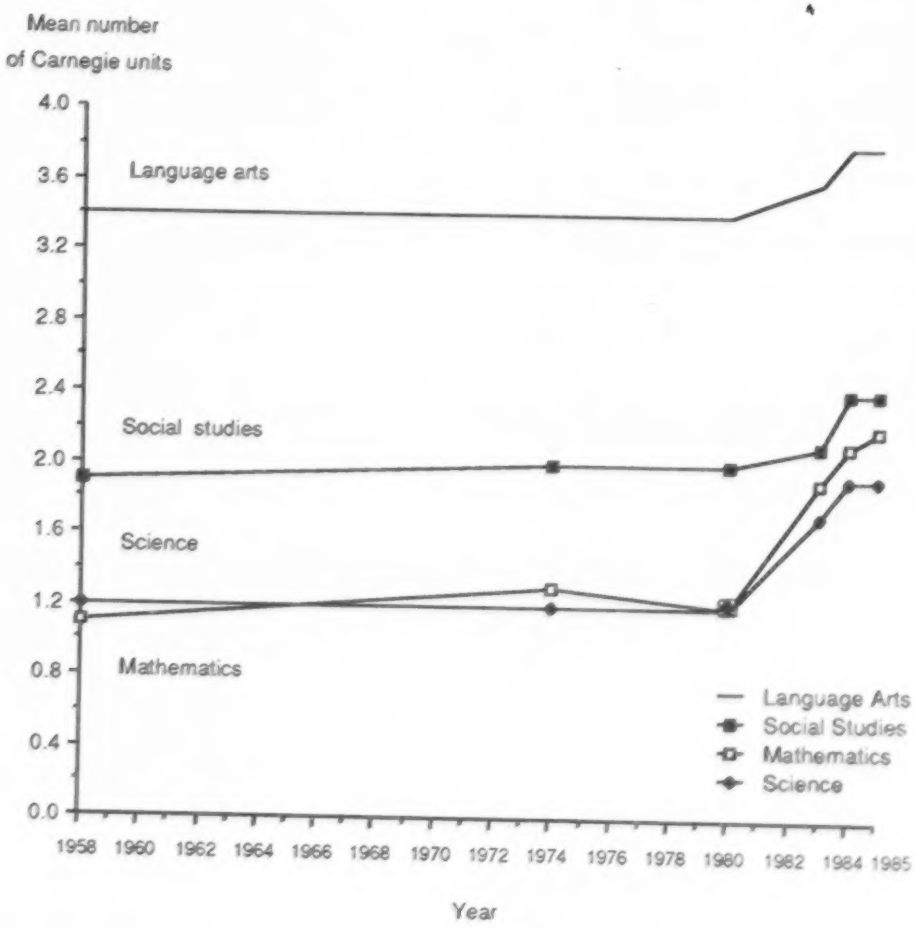
Trends in State-required Carnegie units for high school graduation, for language arts, social studies, mathematics, and science: 1958 to 1985

	Language arts		Social studies	
Year	States requiring courses	Mean units required	States requiring courses	Mean units required
1958	37	3.4	44	1.9
1974	40	3.4	45	2.0
1980	39	3.4	42	2.0
1983	41	3.6	44	2.1
1984	45	3.8	49	2.4
1985	45	3.8	49	2.4

	Mathematics		Science	
Year	States requiring courses	Mean units required	States requiring courses	Mean units required
1958	31	1.1	31	1.2
1974	36	1.3	35	1.2
1980	35	1.2	35	1.2
1983	38	1.9	38	1.7
1984	44	2.1	44	1.9
1985	45	2.2	45	1.9

SOURCE: Education Commission of the States, Department of Research and Information, *Clearinghouse Notes,* various years.

CHART 1:33 -- State-required Carnegie units by subject: 1958 to 1985



SOURCE: Education Commission of the States, Clearinghouse Notes

- After 20 years of stability, there has been a sharp increase since 1980 in the number of Carnegie units in mathematics and science required by the States for high school graduation.
- There has been a smaller increase in the required units for social studies and language arts.

C. Context: State Governance

Minimum competency testing for high school graduation

The interest in minimum competency testing predates the current wave of educational reform. This interest, rooted in the States' desire for educational accountability, began in the mid- to late 1970's. As of 1985, 25 States had enacted minimum competency testing for high school graduation.

There are several combinations of State and local options for implementing a program of minimum competency testing for high school graduation. For instance, in some States, local schools have the option to set their own standards for these competency tests. In some cases where the State sets the standards, local schools have the option not to use the results of the examination for grade promotion or graduation.

Testing for purposes of awarding a high school diploma is not the only purpose for which achievement standards are established. Other purposes include setting standards for grade promotion and identification of students in need of remediation. By 1985, 40 States had either taken legislative or State board action to require or permit schools to identify minimum basic skills that students should acquire. State policies differ in many respects—including the grade levels and subjects involved, the role of the test in decisions about promotion, and remediation.

See Table A12 for details by State.

Table 1:34

States which have enacted minimum competency testing requirements for high school graduation: 1985

State	Required for high school graduation	Government level setting standard	First graduating class assessed
Alabama	Yes	State	1985
Arizona	Yes	State/local	1976
California	Yes	State/local	1979
Colorado	Optional	Local	—
Delaware	Yes	State	1981
Florida	Yes	State/local	1983
Georgia	Yes	State	1985
Hawaii	Yes	State	1983
Kentucky	Yes	—	—
Maryland	Yes	State	1982
Mississippi	Yes	State	1987
Nevada	Yes	State	1982
New Hampshire	Optional	State	—
New Jersey	Yes	State	1985
New York	Yes	State	1979
North Carolina	Yes	State	1980
Oregon	Yes	Local	1978
South Carolina	Yes	State	1990
Tennessee	Yes	State/local	1982
Texas	Yes	State	1987
Utah	Yes	Local	1988
Vermont	Yes	State	1981
Virginia	Yes	State/local	1981
Wisconsin	Optional[1]	Local	—
Wyoming	Optional	Local	1981

—State did not report this information.

[1] While district participation is voluntary, test items are availabe from a State test bank.

SOURCE: Education Commission of the States, *Clearinghouse Notes*, "State Activity—Minimum Competency Testing," November 1985.

CHART 1:34A -- States using minimum competency testing for purposes of high school graduation: 1985

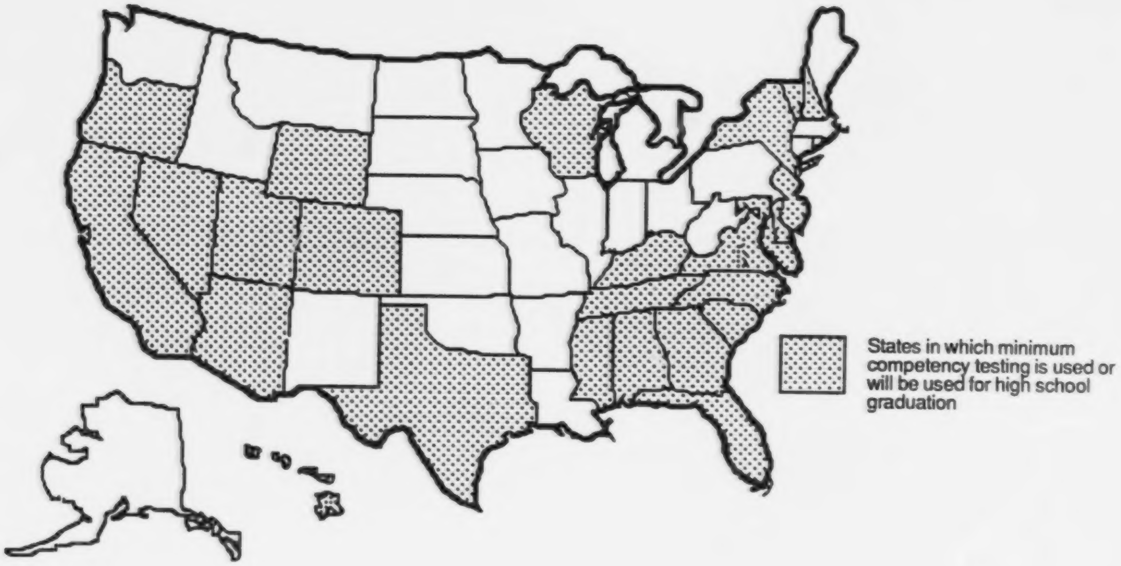
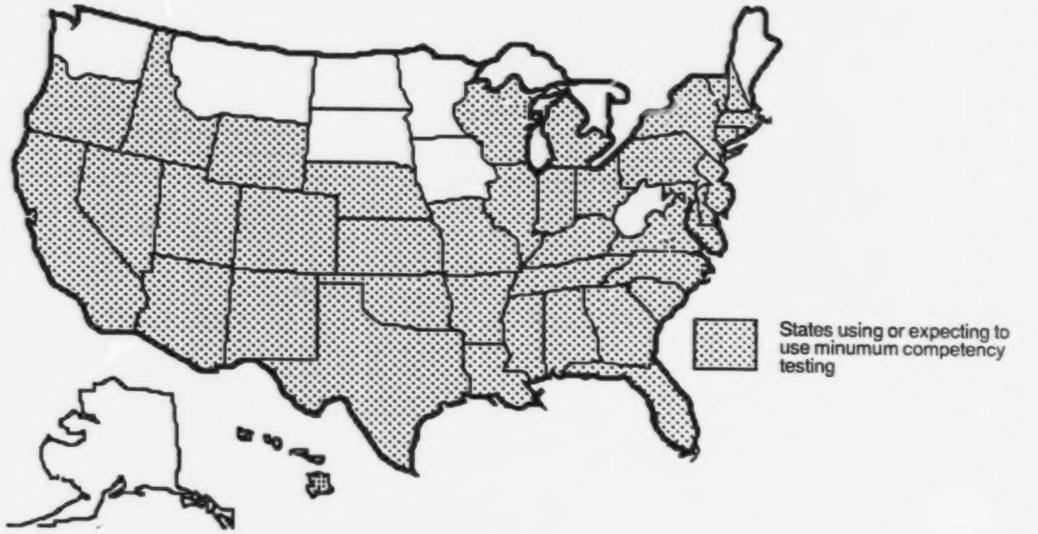

States in which minimum competency testing is used or will be used for high school graduation

CHART 1:34B States using competency testing for student assessment: 1985


States using or expecting to use minumum competency testing

SOURCE: Education Commission of the States, Clearinghouse Notes.

- In 1985, 25 States had enacted requirements for minimum competency testing for high school graduation.
- In 1985, 40 States used or expected to use minimum competency testing for a variety of purposes (see Table A12).

C. Context: State Governance

Competency testing for teacher certification

The States have been predominant in the current educational reform movement and have been particularly active in seeking ways to improve the quality of teachers in elementary and secondary schools. Teacher competency testing is one way of regulating entrance into the teaching profession. It had its genesis among southern States and began prior to the recent spate of reforms. The purpose is to screen out of the teaching force those candidates deficient in basic skills and knowledge.

The table below lists those States that have enacted teacher competency testing as a requirement for initial certification. Some States use competency tests as part of admission requirements into teacher education programs. Two States, Arkansas and Texas, have enacted testing for recertification of experienced teachers, actions that have proven highly controversial.

Another subject of controversy concerns what the tests should cover. There is no nationally accepted test. Some States use commercially developed tests and some use tests of their own design. Tests cover basic skills, subject matter, and/or pedagogy.

While there is no agreement on which test or type of test is most suitable, the concept of testing is generally viewed positively by the major teachers' unions and by the teachers themselves.[1] The Carnegie Forum on Education in the Economy recently proposed a three stage voluntary assessment process covering subject matter, education courses, and teaching performance, all under the aegis of a National Board for Professional Teaching Standards.[2]

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[1] Louis Harris and Associates, *Metropolitan Life Survey of the American Teacher*, 1984.

[2] Carnegie Forum on Education and the Economy, *A Nation Prepared*, 1986.

Table 1:35

States which have enacted testing for initial certification of teachers: 1986

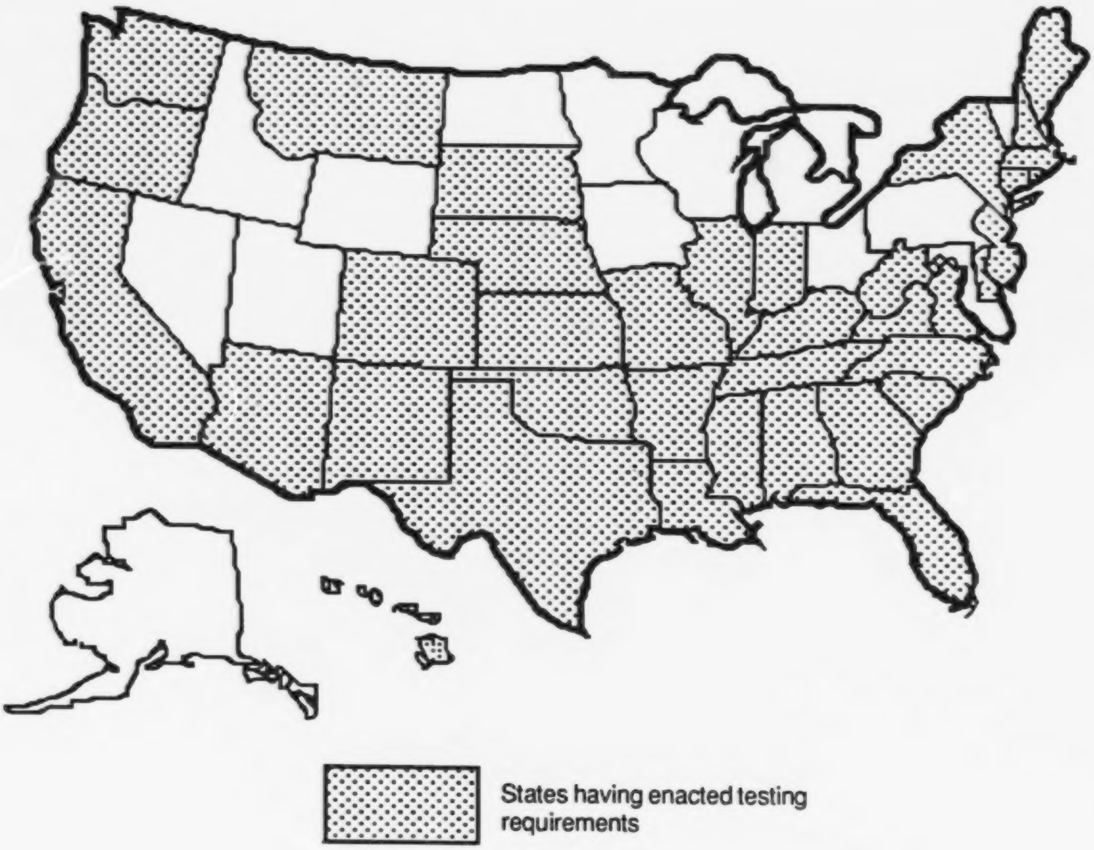
State	Enacted	Effective	Test Used[1]
Alabama	1980	1981	State
Arizona	1980	1980	State
Arkansas	1979	1983	NTE
California	1981	1982	State
Colorado	1981	1983	CAT
Connecticut	1982	1985	State
Delaware	1982	1983	PPST
Florida	1978	1980	State
Georgia	1975	1980	State
Hawaii	1986	1986	NTE
Illinois	1985	1988	State
Indiana	1984	1985	NTE
Kansas	1984	1986	(2)
Kentucky	1984	1985	NTE
Louisiana	1977	1978	NTE
Maine	1984	1988	NTE
Massachusetts	1985	(2)	(2)
Missouri	1985	1988	(2)
Mississippi	1975	1977	NTE
Montana	1985	1986	(2)
Nebraska	1984	1989	(2)
New Hampshire	1984	1985	NTE
New Jersey	1984	1985	NTE
New Mexico	1981	1983	NTE
New York	1980	1984	NTE
North Carolina	1964	1964	NTE
Oklahoma	1980	1982	State
Oregon	1984	1985	CBEST
South Carolina	1979	1982	NTE and State
South Dakota	1985	1986	NTE
Tennessee	1980	1981	NTE
Texas	1981	1986	State
Virginia	1979	1980	NTE
Washington	1984	(2)	(2)
West Virginia	1982	1985	State

[1] Tests: CAT = California Achievement Test; CBEST = California Basic Educational Skills Test; NTE = National Teacher Exam; PPST = Pre-Professional Skills Test; State = State developed test.

[2] To be determined.

SOURCE: Education Commission of the States, *Clearinghouse Notes*, November 1985, and personal communication.

CHART 1:35 -- **States having enacted testing requirements for initial certification of teachers: 1986**


States having enacted testing requirements

SOURCE: Education Commission of the States, Clearinghouse Notes.

- As of 1986, 35 States have enacted competency testing as part of the process for initial certification of teachers.

Overview

Postsecondary Education Indicators

The 10 indicators presented in this section of the report span the categories of outcomes, resources, and context. These indicators pertain to many policy issues in higher education, such as student financial aid, enrollment and participation patterns, and revenue sources. However, they do not present as comprehensive a picture of the condition of postsecondary education as the Nation should have. The small number reflects the fact that development of postsecondary indicators is a year behind that of indicator development for elementary and secondary education. Moreover, the availability of data—especially on outcomes—is more limited than for elementary and secondary education. Although some institutions and States have developed assessment programs, the higher education community has not yet developed and applied on a national basis measures of what students are learning in higher education.

The first step toward a comprehensive set of postsecondary indicators was a paper developing a conceptual framework and a list of candidates for potential postsecondary indicators. The Center for Statistics circulated this paper for comment within the Department of Education. The paper was also the basis of a meeting with the American Council on Education's (ACE) Advisory Panel on Postsecondary Education, which resulted in recommendations about specific indicators to be included in the 1986 *Condition of Education* and others to be developed in the future. Further discussions within the Center for Statistics and with other experts on postsecondary education led to modifications of individual indicators as well as additions and subtractions to the list. Lack of reliable data, particularly over time, for proprietary and other postsecondary institutions outside of colleges and universities generally limited the choice to indicators of higher education. Thus, the 10 indicators selected reflect not only the advice of many members of the postsecondary community, but also a host of conceptual, policy, and technical concerns.

Outcomes

Perhaps the most crucial questions about the condition of higher education concern outcomes: What do students learn? What difference does it make whether an individual attends college? Important dimensions of outcomes include student performance, coursework and fields of study, rigor of courses, completion rates, transition to graduate school and other post-college activities, and related benefits.

Three indicators related to higher education outcomes are presented in this report, each dealing with a different aspect of outcomes. Two—test scores and distribution of bachelor's degrees—indicate similar trends across fields of study over time. The third highlights the positive economic benefits of college attendance to the individual.

Student performance. National data on the academic achievement of college students are scarce and inadequate. Only scores for those taking various tests in the process of applying to graduate and professional schools are available. Of those tests, only the Graduate Record Examination (GRE) can be used to make comparisons over time, and the comparisons apply only to those taking the tests, a self-selected and changing subset of American college students. Comparing scores of GRE test-takers in 1985 with those in 1964 reveals some interesting trends across fields (Indicator 2:1). Scores in 1985 were generally lower than in 1964 in the humanities, social sciences, and education. Scores were generally unchanged or improved for scientific and technical fields.

Transitions. Other outcomes concern the fields of study that students pursue and how those change over time. Throughout the 1970's and continuing into the early 1980's, there has been a shift away from the traditional arts and sciences in the distribution of bachelor's degrees conferred. The proportion of bachelor's degrees in job-related fields, such as business, engineering, and computer sciences, has increased considerably, while the number and proportion of arts and sciences degrees have been declining. The decrease in arts and sciences degrees has been most pronounced for the social sciences (Indicator 2:2).

It is also interesting to note that trends in performance (as measured imperfectly by GRE scores) and the distribution of bachelor's degrees vary in similar ways across fields. Scores declined in the same fields in which the number of bachelor's degrees have been declining—the social sciences, humanities, and education. Scores increased or were stable in technical fields, where the number and proportion of degrees have been increasing.

Another measure of the performance of higher education is how former students fare in the larger society, including the economic arena. Indicator 2:3 shows that those who attend college have higher incomes than those who do not and that this advantage has been increasing since the late 1970's, after declining earlier in that decade. In addition, unemployment rates are lower for those who have attended college than for those who have not. Furthermore, college graduates have lower unemployment rates and higher incomes than those who attend college but do not obtain a bachelor's degree.

Resources

Another important set of indicators relates to the quality, quantity, and combinations of resources that collectively contribute to higher education outcomes. Resources include human resources (faculty), material resources (buildings, library books, computers), and fiscal resources, which pay for the human and material ones and for other costs such as student assistance. The three resource indicators in this report all relate to fiscal matters. In future editions, indicators of human and material resources will be included.

Fiscal resources. During the early 1980's, nongovernmental sources of revenue have played an increasing role in higher education finance. This pattern is apparent in several arenas. While expenditures per student in constant dollars tended to decline in public institutions, they generally rose or remained unchanged in private institutions (except 2-year schools). In the 1980's, there has also been some shift in the relative importance of various revenue sources toward greater dependence upon tuition and fees and less reliance on public funds. Even as tuition and fees were growing in importance and the number of aid recipients was increasing, average aid amounts from the major Federal student financial aid programs were declining in constant dollars. These trends are elaborated in a group of three indicators.

Expenditure levels are one way to measure the level of resources devoted to higher education and changes over time. Indicator 2:4 shows that while expenditures per student increased by nearly one-third between 1980 and 1984, that growth did not keep pace with inflation. The indicator also shows that private institutions generally spend more per student than similar public ones and that except for 2-year schools, the difference widened somewhat during the 1980's.

While expenditures represent one side of the financial balance sheet for higher education institutions, revenues represent the other. Indicator 2:5 describes who is paying for higher education and how that has changed over time. It shows that more than half the current fund revenues for private institutions come from tuition and fees, while public appropriations provide a similarly large proportion of revenues for public institutions. However, revenue trends during the 1980's were similar for both public and private institutions. Tuition and fees as a share of institutional revenues grew; at the same time there was a decrease in the share provided by public revenues.

Student financial aid is an important source of funds to help families and students cover the cost of college. For the Federal Government, expenditures on financial aid for college students are larger than any other program in the Department of Education. For four of the six major Federal student aid programs, including the two largest, Pell Grants and Guaranteed Student Loans, there were more aid recipients in 1985-86 than in any of the previous 12 years. However, during the past decade, when the number of aid recipients was increasing for most Federal programs, average aid amounts for these programs did not keep pace with inflation (Indicator 2:6 and Table A14 in Appendix A).

Context

Higher education exists within the context of the larger society. The nature of the external environment and the links between that environment and institutions of higher education influence the operation and outcomes of higher education. Two important contextual dimensions for which indicators have been presented in this report are student characteristics and enrollments, and public perceptions of higher education. Another area, one for which indicators have not yet been developed, is the governmental context, including State and Federal regulation.

Student characteristics. Enrollment levels and the composition of that enrollment affect higher education in a number of ways. The number of students and the types of institutions they attend reflect the demand for higher education services and also have an impact on revenue levels. Student characteristics indicate the extent to which various subgroups in the population are participating in higher education.

The 1970's were a period of rapid change in enrollment patterns, while the first half of the 1980's has been characterized by much less change and some reversal of earlier trends. This pattern can be seen in trends for total enrollment, enrollment by institutional characteristics, and student characteristics.

Total enrollment in higher education increased by 45 percent between 1970 and 1983 (Indicator 2:7). The overall enrollment decline that appeared in 1984 is projected to continue into the 1990's. See Kaufman (1986) for a discussion of these trends and the factors contributing to them.

Two-year institutions grew rapidly during the 1970's, increasing their share of higher education enrollments from one-fourth to more than one-third. Most of the growth in students occurred in public 2-year institutions, whose enrollments more than doubled between 1970 and 1983. However, the number and proportion of students in 2-year institutions have fallen since 1982 due to a 5 percent decrease in the number of students in public 2-year institutions (Indicator 2:7).

As enrollments, particularly enrollments in 2-year institutions, were growing during the 1970's, the composition of the student body was changing. The proportions of college students who were women, part-time, and 25 years of age or over increased considerably during the decade. These trends have continued since 1980, but the rate of increase has been much slower (Indicator 2:8).

The gap between minority and white participation rates in higher education narrowed during most of the 1970's, but has increased since then. In 1985, the differences in participation rates for minority and white 18- to 24-year-olds were similar to what they had been in the early 1970's. Participation rates for blacks and Hispanics rose in the early 1970's and for whites in the 1980's (Indicator 2:9).

Perceptions. Institutions of higher education are dependent in many ways on public support, most notably in terms of dollars and students. In addition, the level of public confidence in higher education and its products is one way of assessing how well the enterprise is meeting society's expectations. The American public's view of higher education during the 1980's has generally been favorable (Indicator 2:10).

Conclusion

The indicators presented in this section, while not providing a comprehensive picture of postsecondary education in the mid-1980's, do furnish certain important insights about enrollment and support for higher education.

Three new and ambitious surveys from the Center for Statistics will provide considerable data for future indicators. These are: the Integrated Postsecondary Education Data System (IPEDS) which replaces the Center's Higher Education General Information Survey (HEGIS), the National Postsecondary Student Aid Survey (NPSAS), and the National Education Longitudinal Study (NELS88), a new longitudinal study to be mounted in 1988. IPEDS is intended to gather data on all types of postsecondary institutions including proprietary institutions, making it possible to develop indicators of all postsecondary education, not just higher education. The first IPEDS surveys will be conducted in the fall of 1986 and data should be available for the 1988 edition of this volume.

NPSAS will collect data on student financial aid that will be suitable for a variety of indicators, including who receives aid, how aid is packaged, and levels of debt. The first NPSAS data collection will take place in 1987 and the results may be available in time for inclusion in the 1988 publication.

The expansion in the number and coverage of indicators will result eventually in a much broader and more complete picture of the condition of postsecondary education. Whether there will be indicator-like data on the outcomes of postsecondary education in the near future remains to be seen. This is an area where the postsecondary institutions must take the lead. Federal encouragement will be provided in the Department of Education's planned support over the next several years of indicator model development for "summative" learning in selected academic disciplines. See Adelman (1986) for a summary of current trends in higher education assessment and a description of a number of promising institutional efforts.

References

Adelman, C. (ed.), *Assessment in American Higher Education: Issues and Context*, 1986, U.S. Department of Education.

Kaufman, P., "Growth in Higher Education Enrollment: 1978 to 1985." *The Condition of Education, 1986 Edition*, U.S. Department of Education.

A. Outcomes: Student Performance

College student achievement: A selected profile

Since the publication of a series of national reports on the quality of American higher education in 1984 and 1985, there has been a growing interest in data concerning the academic achievement of college graduates.[1] Most of the assessments that would yield such data, however, are designed and administered by individual colleges and universities, and hence are not comparable. While eight States have initiated assessment programs in their public institutions of higher education, and while others are actively considering such programs, these assessments are designed principally for purposes of placement, admission to special programs, or demonstration of competence in basic skills as a condition of advancement from the sophomore to the junior year.

The only national data on the academic outcomes of higher education come from the various tests taken by students in the process of applying to graduate and professional schools. Of the data yielded by these tests, only those from the Graduate Record Examinations offer the potential for historical comparisons. See Appendix C for a more detailed discussion of the interpretation of these data. In 1984-85, some 272,000 college graduates and soon-to-be-graduates took the Graduate Record Examinations, and 77,000 took one of the 17 Graduate Record Subject Area Tests. Approximately 85 percent of these test-takers were U.S. citizens.

The accompanying table presents changes in student performance between 1964 and 1985 on two sections of the GRE General Examination (verbal and quantitative) and on 14 subject area tests for which there were 1,000 or more test-takers in 1984-85. The changes are presented in terms of Standard Deviation Units (SDUs), a statistical method for standardizing changes in scores from tests with different scales. Given the 21-year time frame, SDUs measure change more accurately than average scores because they account for possible differences in the range of scores.

Because of the ways in which the data from these tests were reported prior to 1975, it is not possible to separate the performance of U.S. citizens from that of foreign students in this table. Based on post-1975 data, though, it is fair to say that the performance of foreign students has a negative impact on results in tests requiring verbal ability and a positive impact on results in tests requiring mathematical ability.

This table should not be interpreted as an indicator of the quality of higher education in the United States. In general, the table reflects the performance of a self-selected—though large—group of test-takers who have higher educational aspirations than most of their peers.

Table 2:1

Changes in performance on Graduate Record Examination tests, between 1964 and 1985 (unless otherwise noted)

Descriptive term and tests	Change (in standard) deviation units)	Descriptive term and tests	Change (in standard) deviation units)
Large increase:		Small decline	
Mathematics (Area test)	+.42	Psychology (Area test)	−.16
Moderate increase:		Moderate decline:	
None	—	Music (Area test: 1966–1985)	−.23
Small increase:		Education (Area test)	−.24
Physics (Area test)	+.12	Geology (Area test: 1967–1985)	−.27
No change:		Large decline	
Quantitative (General examination)	+.09	Verbal (General examination)	−.44
		Literature in English (Area test)	−.62
Biology (Area test)	+.02	History (Area test)	−.70
Economics (Area test)	.00	Extreme decline:	
Engineering (Area test)	−.03	Sociology (Area test)	−.90
Chemistry (Area test)	−.06	Political Science (Area test)	−1.08

SOURCE: Clifford Adelman, *The Standardized Test Scores of College Graduates, 1964–1982,* Washington DC: Office of Educational Research and Improvement, U.S. Department of Education, 1985, and unpublished tabulations.

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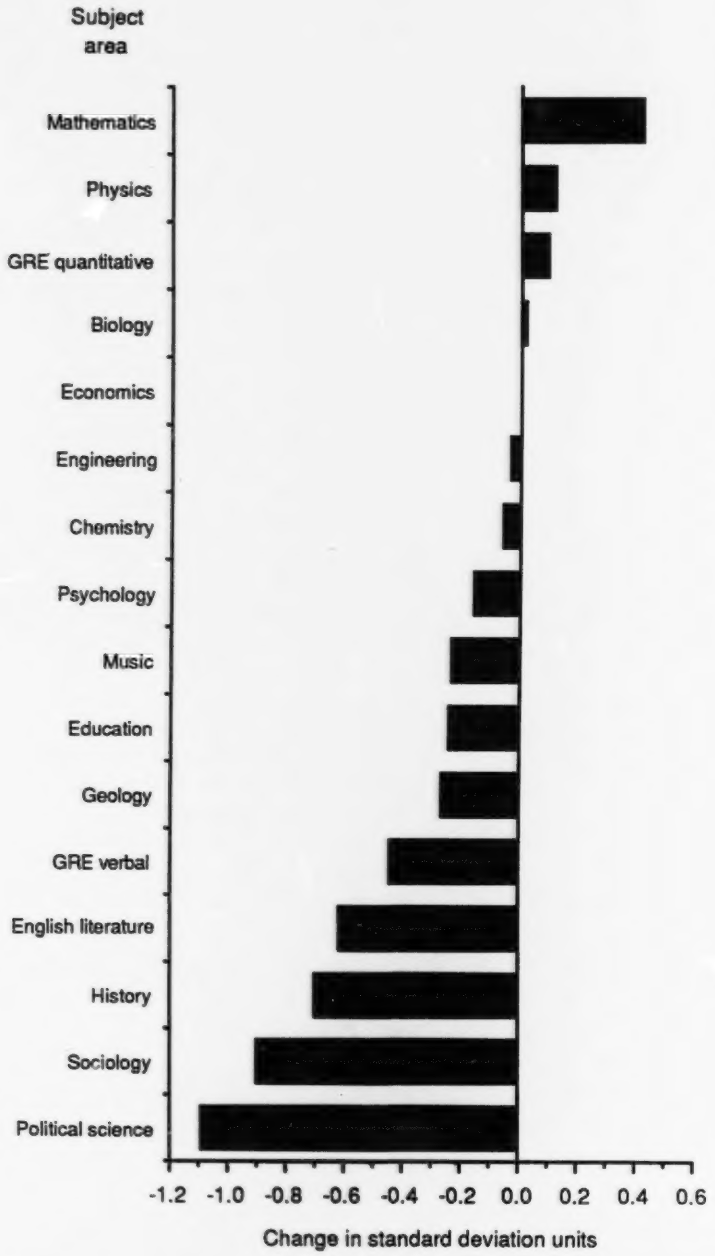
[1] For examples see Bennett, W.J., *To Reclaim a Legacy*, 1984; and the Study Group on the Conditions of Excellence in American Higher Education, *Involvement in Learning*, 1984.

CHART 2:1 -- Changes in performance on Graduate Record Examinations (GRE) between 1964 and 1985



SOURCE: Clifford Adelman, The Standardized Test Scores of College Graduates, 1964-1982, 1985, and unpublished tabulations.

- Changes in scores on the Graduate Record Examination tests have varied by subject area.
- Scores have changed very little or moved upward on most of the scientific and technical tests but have declined on most of the social science and language subject tests.

Bachelor's degrees conferred, by field

Trends in the number and type of bachelor's degrees awarded provide useful information to employers seeking job applicants, college administrators planning future programs, and policymakers tracking employment trends.

In recent years the proportion of students receiving bachelor's degrees in the traditional fields of arts and sciences has steadily declined. In 1970-71, arts and sciences comprised 49.9 percent of all bachelor's degrees conferred, but by 1982-83 comprised only 35.5 percent. This phenomenon occurred because of the decline in the absolute number of degrees conferred in arts and sciences and the growth in the number of degrees in job-related fields such as business, engineering, and computer science. The number of degrees in the arts and sciences declined 17.7 percent from 1970-71 to 1982-83, while the number of job-related degrees increased 48.4 percent to nearly two-thirds of all degrees awarded in 1982-83.

Table 2:2

Bachelor's degrees conferred, by field: 1970–71 to 1982–83

Discipline division	1970–71	1971–72	1972–73	1973–74	1974–75	1975–76	1976–77	1977–78	1978–79	1979–80	1980–81	1981–82	1982–83
	Number of degrees (In thousands)												
Total	840	887	922	946	923	926	920	921	921	929	935	953	970
Arts and sciences	419	432	443	449	429	419	401	388	372	363	353	353	345
Sciences	275	283	290	293	277	268	255	244	234	227	219	218	211
Physical and biological sciences	82	82	86	91	91	92	90	87	84	81	78	77	76
Social sciences	193	201	204	202	186	176	164	157	150	145	141	141	135
Humanities	144	149	153	156	152	151	146	143	138	136	134	136	133
Job-related	421	455	479	497	494	507	519	534	549	567	582	600	625
Business and management	115	121	126	132	133	142	151	160	172	185	199	214	227
Education	177	191	194	185	167	155	144	136	126	118	108	101	98
Other job-related	130	143	159	180	194	210	224	237	251	263	274	284	300
Computer and information sciences	2	3	4	5	5	6	6	7	9	11	15	20	25
Engineering and engineering technologies	50	51	51	50	47	46	49	56	62	69	75	80	89
Other	77	88	103	125	142	158	168	174	180	183	184	184	186

NOTE: Percentages in accompanying text were calculated from unrounded data.
SOURCE: U.S. Department of Education, Center for Statistics, *Digest of Education Statistics, 1985–86.*

CHART 2:2A -- Bachelor's degrees conferred: 1970-71 to 1982-83

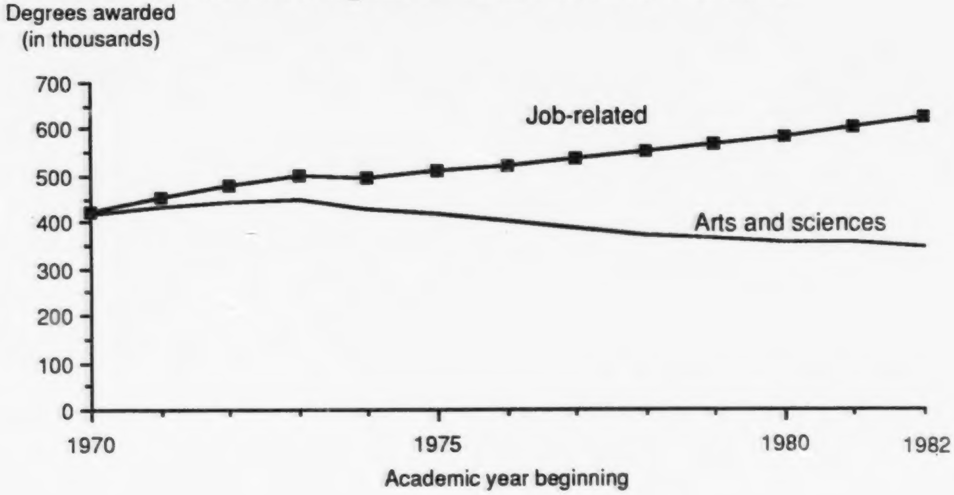
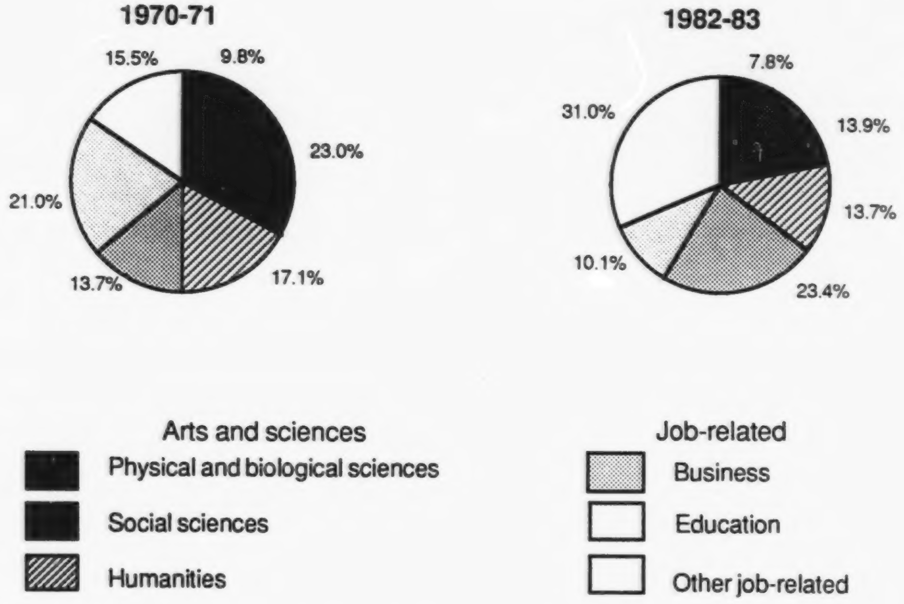


CHART 2:2B -- Bachelor's degrees conferred, by field



SOURCE: Center for Statistics, Digest of Education Statistics, 1985-86.

- Since 1970, the number of bachelor's degrees awarded in the arts and sciences has declined by about 74,000, while the number of job-related degrees awarded has increased by about 204,000.

- Job-related degrees increased from 50 percent of all degrees conferred in academic year 1970-71 to nearly 64 percent of all degrees conferred in 1982-83.

A. Outcomes: Transitions

Economic outcomes of higher education

It has long been assumed that college graduates enjoy an economic advantage over high school graduates. Recently, however, the view that a college education is always a worthwhile investment in the student's economic future has been questioned. Some critics have argued that the labor market position of college graduates has deteriorated in recent years,[1] so that in some cases a college degree is only a marginal investment for the student.

Table 2:3 displays the ratio of the median income[2] for persons with 5 or more years of college, 4 years of college, and 1 to 3 years of college to the median income of high school graduates. (All ratios are for male full-time workers.)[3] Although there are several problems with making straightforward inferences from these data (see Appendix C), generally the data presented here support the common assumption that a college degree gives graduates an advantage in the labor market. These data also support the observation that during the 1970's the income of persons who had attended college declined relative to the income of high school graduates. However, the table further shows that since the early 1980's, the income of persons who attended college has *increased* relative to high school graduates.

Furthermore, the relative economic advantage increases with years of college. For example, in 1985 males with 4 years of college earned 1.38 times the median income of males with only 4 years of high school. Males with 5 or more years of college earned 1.65 times the median income of high school graduates.

Table 2:3 also displays unemployment rates for males in the labor force by educational attainment. Persons with lower education attainment levels tend to have higher unemployment rates. Furthermore, at higher educational levels, the employment rates are more stable. For example, while unemployment for males in the labor force with only a high school diploma increased from 6.9 to 13.6 percent between 1980 and 1983, unemployment increased from 1.8 to 3.6 percent for male college graduates.

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[1] Freeman, R. The Facts about the Declining Economic Value of College, *Journal of Human Resources*, *15*(1), 124-142, 1980.

[2] Personal income is limited to money income. See Appendix E for details.

[3] Because of the differences in employment patterns for males and females and for part-time and full-time workers, this indicator has been limited to male full-time workers.

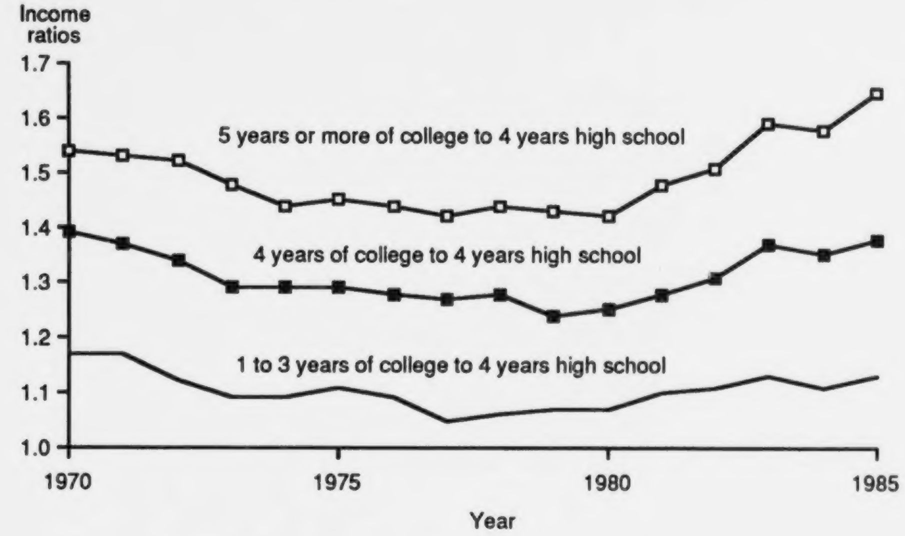
Table 2:3

Median income of full-time male workers with 4 years of high school, ratio of income of full-time male workers by educational attainment: 1970 to 1985, and unemployment rates for males by educational attainment

Year	Median income: 4 yrs of high school	Income ratios (In constant 1970 dollars)			Unemployment rate				
		1–3 yrs college to 4 yrs high school	4 yrs college to 4 yrs high school	5 or/+ yrs of college to 4 yrs high school	Total	High school education		College education	
						1–3 yrs	4 yrs	1–3 yrs	4 or/+ yrs
1970	$9,567	1.17	1.39	1.54	3.7	5.6	3.4	3.8	1.3
1971	9,584	1.17	1.37	1.53	5.5	8.0	5.0	5.6	2.0
1972	10,278	1.12	1.34	1.52	5.9	9.7	5.4	4.8	2.2
1973	10,500	1.09	1.29	1.48	4.7	8.4	4.0	3.9	1.8
1974	9,954	1.09	1.29	1.44	4.8	8.9	4.3	3.8	1.8
1975	9,770	1.11	1.29	1.45	9.0	14.7	9.1	6.6	2.5
1976	9,751	1.09	1.28	1.44	7.8	13.5	8.0	6.3	2.4
1977	9,890	1.05	1.27	1.42	7.5	13.4	7.2	5.5	2.8
1978	9,759	1.06	1.28	1.44	6.3	12.1	5.9	4.3	2.2
1979	9,683	1.07	1.24	1.43	5.8	11.9	5.5	4.3	1.9
1980	9,174	1.07	1.25	1.42	6.8	12.8	6.9	5.0	1.8
1981	8,794	1.10	1.28	1.48	8.1	15.6	8.8	5.2	2.1
1982	8,586	1.11	1.31	1.51	10.3	19.4	11.3	7.5	3.2
1983	8,505	1.13	1.37	1.59	11.9	21.4	13.6	9.3	3.6
1984	8,699	1.11	1.35	1.58	8.6	17.6	9.4	5.7	2.8
1985	8,610	1.13	1.38	1.65	7.5	15.9	8.0	5.1	2.6

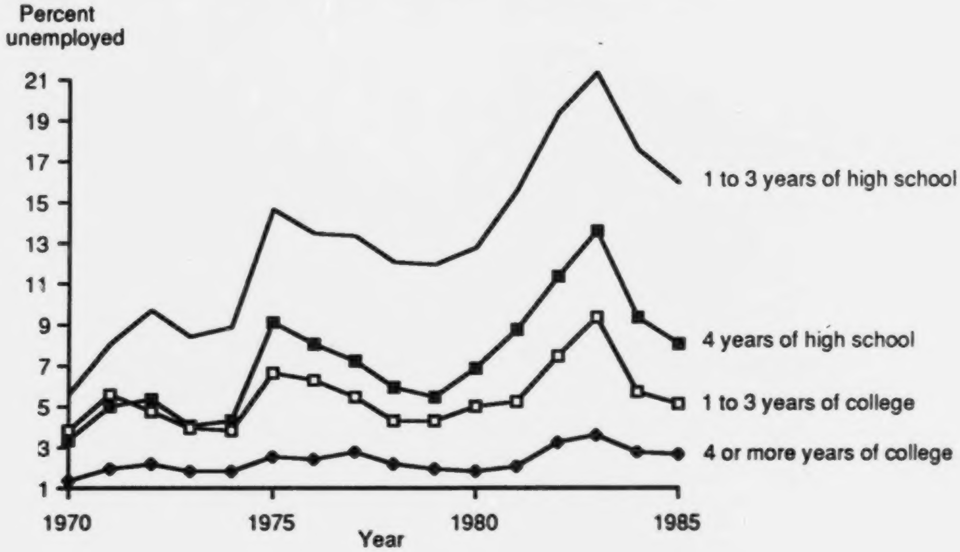
SOURCES: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P–60, *Money Income of Families and Persons in the United States*, various years. U.S. Department of Labor, Bureau of Labor Statistics, *Handbook of Labor Statistics*, Bulletin 2217, 1984 and personal communication.

CHART 2:3A -- Income ratios of full-time male workers, by educational attainment



SOURCE: Bureau of the Census, Current Population Reports, Series P-60.

CHART 2:3B -- Unemployment rates of males, by educational attainment



SOURCE: Bureau of Labor Statistics, Handbook of Labor Statistics.

- Those who attend college tend to have higher incomes than those whose formal education ended with graduation from high school.
- Attending college decreases the likelihood that an individual will be unemployed.
- These relationships have held through periods of economic growth and recession.

B. Resources: Fiscal Resources

Current expenditures per student in institutions of higher education

Policymakers and elected officials must make decisions about the level of resources available to institutions of higher education. One measure of resource availability is the level of expenditures per student, constructed by dividing the sum of institutional expenditures by the number of full-time equivalent (FTE) students. In order to compare the purchasing power of expenditures over time, this measure must be adjusted for price changes (i.e., be expressed in constant dollars).

Between fiscal years 1980 and 1984, expenditures per student for all institutions rose 32.5 percent in current dollars, but declined by 3 percent in constant dollars. During this period, constant dollar expenditures per student rose at 3 of the 4 types of private institutions, with private doctoral institutions having the greatest increase. All public institutions experienced a decline in constant dollar expenditures per student. Private 2-year institutions had the largest decline in constant dollars among all institutions. Data on trends in selected expenditure categories may be found in Table A13.

Care should be taken in interpreting these data. Each type of institution has its own special mission, making interinstitutional comparisons difficult. Moreover, not all expenditures benefit students directly and per student expenditure increases do not ensure that higher quality resources have been purchased or that more learning will ensue.

Table 2:4

Changes in expenditures per full-time equivalent student in institutions of higher education in current and constant dollars, by type and control of institution: Fiscal years 1980 and 1984

Fiscal year[1]	All institutions[2]	Public				Private			
		Doctoral	Comprehensive	General baccalaureate	2-year	Doctoral	Comprehensive	General baccalaureate	2-year
		Expenditures per FTE[3]				Expenditures per FTE[3]			
Current dollars:									
1980[4]	$5,248	$7,150	$4,183	$3,797	$2,722	$11,734	$5,028	$4,816	$3,048
1984	6,954	9,566	5,142	4,719	3,430	17,644	6,990	6,938	3,549
Percent change:	32.5	33.8	22.9	24.3	26.0	50.4	39.0	44.1	16.4
Constant dollars:									
1980	5,248	7,150	4,183	3,797	2,722	11,734	5,028	4,816	3,048
1984[5]	5,091	7,003	3,764	3,455	2,511	12,917	5,117	5,079	2,598
Percent change:	−3.0	−2.1	−10.0	−9.0	−7.7	10.1	1.8	5.5	−14.8

[1] For most institutions the fiscal year corresponds to the school year; for example, fiscal year 1980 corresponds to the academic year of July 1, 1979 through June 30, 1980.

[2] Included among all institutions but not presented separately in the table are specialized institutions and a small number of new institutions. See the Glossary for definitions of institution types.

[3] Expenditures entail education and general expenditures, including all current funds expenditures except those for auxiliary enterprises, hospitals, and independent operations and their associated mandatory transfers. Data for 1984 were adjusted to make them comparable to 1980.

[4] Full-time equivalents for part-time enrollments for fiscal 1980 were estimated.

[5] 1984 expenditures were adjusted to 1980 purchasing power using the Higher Education Price Index (HEPI). See the Glossary for further information.

NOTE: Percentages may vary slightly due to rounding.

SOURCE: U.S. Department of Education, Center for Statistics, unpublished tabulations based on "Financial Statistics of Institutions of Higher Education," fiscal years 1980 and 1984; and "Fall Enrollment in Higher Education" surveys, fall 1979 and fall 1983.

CHART 2:4A -- Current expenditures per student at public and private institutions: 1984

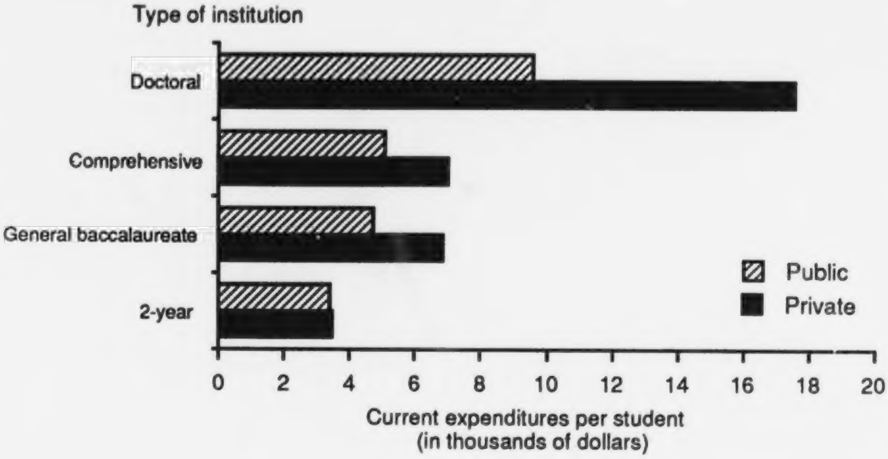
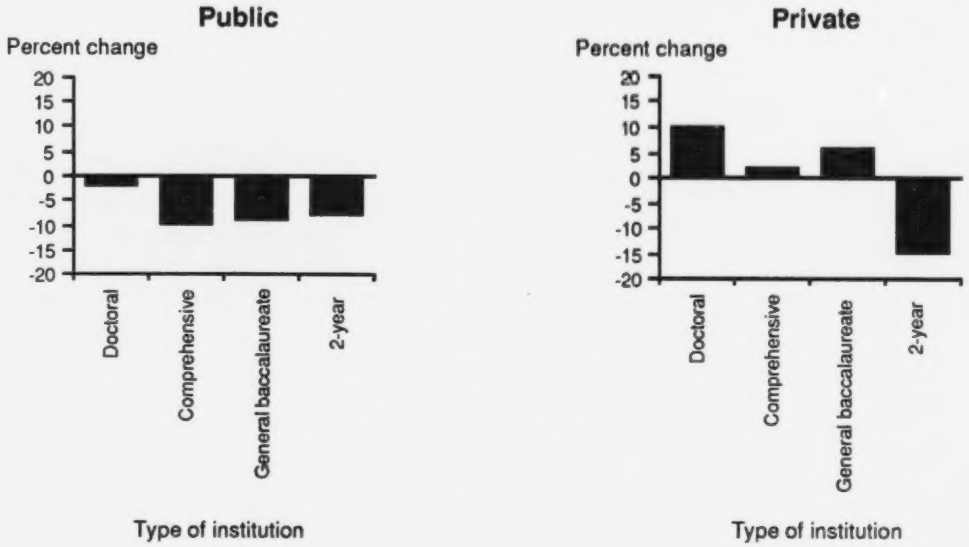


CHART 2:4B -- Percent change in expenditures per student: From 1980 to 1984
(Constant 1980 dollars)



SOURCE: Center for Statistics, unpublished tabulations.

- Expenditures per student are generally higher in private than in public institutions.
- Two-year public and private institutions spent approximately the same amount per student in fiscal 1984.
- During the early 1980's, expenditures per student, when adjusted for inflation, declined in public institutions and grew in nearly all types of private institutions.

Revenues of higher education institutions

Higher education institutions are maintained through a variety of revenue sources. Enrollments are a particularly important determinant of revenue levels. For private institutions, tuition and fees make up more than half of the total general education revenues and are more than three times as large a share of these revenues as for public institutions. For public institutions, State and local allocations as well as revenues from tuition and fees are generally a function of enrollment. Together these two sources make up over 75 percent of public institutions' total revenues. Tuition and fees have been increasing in both types of institutions over the fiscal years 1980 to 1984. Federal student financial aid awards are included in the tuition and fee revenue category rather than under government appropriations or grants and contracts.

State and local government appropriations are at least 30 times as large a share of general education revenues for public as for private institutions. Federal government grants and contracts are the second largest source of revenues for private institutions and the third largest source for public ones. For both types of institutions, this source as a share of general education revenues has declined somewhat in recent years. Private contributions and contracts, as a proportion of general education revenues, are three times as large for private institutions as for public institutions.

Table 2:5

General education revenues and shares of general education revenues for institutions of higher education by source of revenue and control: Selected fiscal years 1976 through 1984

	All institutions				Public institutions				Private institutions			
Fiscal year[1]	1976	1980	1982	1984	1976	1980	1982	1984	1976	1980	1982	1984
Total (In billions of dollars)[2]	$30.7	$44.9	$54.6	$63.7	$21.7	$31.3	$37.4	$43.1	$ 9.0	$13.6	$17.2	$20.5
Percent of total revenue	100	100	100	100	70.6	69.7	68.5	67.7	29.4	30.3	31.5	32.3
	Selected revenue categories as a percent of total revenues[2]											
Tuition and fees	26.6	26.6	28.9	31.0	16.0	15.5	17.1	18.8	52.0	51.9	54.6	56.5
Government appropriations:												
Federal	3.0	2.7	2.4	2.2	3.6	3.3	2.9	2.8	1.4	1.5	1.2	1.0
State and local	42.8	42.2	41.3	40.0	59.9	59.8	59.5	58.4	1.9	1.7	1.6	1.4
Government grants and contracts:												
Federal	14.7	14.6	12.9	11.6	13.0	12.7	11.2	10.2	18.7	18.8	16.4	14.3
State and local	2.3	2.3	2.2	2.3	2.2	2.3	2.3	2.3	2.7	2.4	2.1	2.2
Private gifts, grants, and contracts	6.2	6.3	6.5	6.9	2.8	3.1	3.4	3.8	14.4	13.4	13.3	13.6
Endowment income	2.2	2.6	2.9	2.9	0.4	0.6	0.7	0.7	6.5	7.2	7.9	7.6
Sales and services of education activities	2.1	2.8	2.9	3.1	2.0	2.6	2.9	3.0	2.5	3.1	3.0	3.4

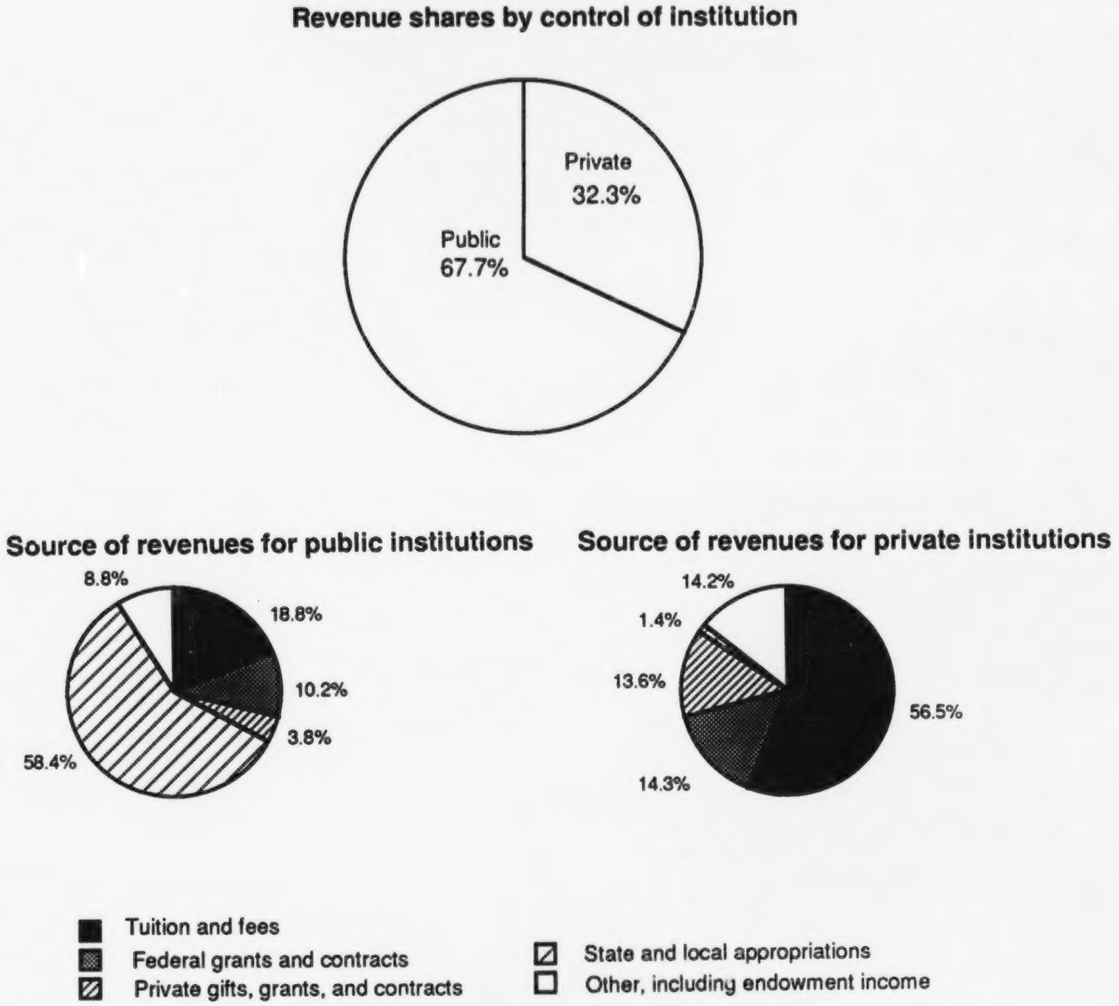
[1] For most institutions the fiscal year corresponds to the school year; fiscal year 1980 corresponds to school year July 1, 1979 through June 30, 1980.

[2] Not all revenues accruing to higher education institutions are included here. Excluded from the table are revenues associated with major Federally-funded Research and Development Centers, sales and services of auxiliary enterprises and hospitals, and other sources (includes all revenues not covered elsewhere on the survey form). Data for fiscal year 1984 were adjusted to make them comparable to prior years' data.

NOTE: Detail may not add to 100 percent due to rounding.

SOURCE: U.S. Department of Education, Center for Statistics, *Digest of Education Statistics, 1987* (forthcoming).

CHART 2:5 -- Shares and sources of revenues for public and private institutions of higher education, Fiscal Year 1984


Revenue shares by control of institution

Source of revenues for public institutions

Source of revenues for private institutions

SOURCE: Center for Statistics, Digest of Education Statistics, 1987, (forthcoming).

- State and local appropriations are the largest source of funds for public institutions (58 percent), but contribute only slightly more than one percent to private institutions' revenues.

- Private institutions depend on tuition and fees as a source of revenue (56 percent) to about the same extent that public institutions rely on State and local appropriations (58 percent). Tuition and fees are the second largest source of revenues for public institutions (19 percent).

- Private institutions receive a larger share of their revenues from Federal grants and contracts (14 percent) than do public institutions (10 percent).

- Private institutions derive a larger share of income from non-government gifts, grants, and contracts (14 percent) than do public institutions (4 percent).

B. Resources: Fiscal Resources

Federal student financial aid programs and awards

Student financial aid is a primary vehicle for ensuring that capable students are not excluded from a postsecondary education because of financial constraints. Recently, Federally authorized programs have provided approximately 80 percent of student financial aid dollars.[1] Three of the major Federal student financial aid programs provide aid through postsecondary institutions and hence are called campus-based aid programs. They are the Supplemental Educational Opportunity Grant program (SEOG), the College Work-Study program (CW-S), and the National Direct Student Loan program (NDSL). Students are the direct recipients of funds through the Pell Grant program and the Guaranteed Student Loan program (GSL). Finally, students obtain grants under the State Student Incentive Grants program (SSIG), either through their institution or a State education agency.

The average amounts of aid awarded, as shown below, include matching funds required from institutional sources for the College Work-Study and National Direct Student Loan programs, and State matching funds for the State Student Incentive Grants program. Loan amounts associated with the GSL program represent private loan capital made available to students through lending institutions such as banks, and savings and loan associations. See Table A14 for data on average awards in constant dollars.

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[1] Gillespie, D.A., and Carlson, N., *Trends in Student Aid: 1963 to 1983*. The Washington Office of the College Board, December 1983, pg. v.

Table 2:6

Average amounts received in current dollars and number of recipients, by type of Federal postsecondary student aid program: 1973–74 to 1985–86

Academic year	Pell Grant	SEOG	CW-S	NDSL	SSIG	GSL	Pell Grant	SEOG	CW-S	NDSL	SSIG	GSL
	Average amounts per recipient[1]						Number of recipients[1] (in thousands)					
1973–74	$ 270	$571	$532	$661	([2])	$1,137	176	331	556	655	([2])	1,030
1974–75	631	506	518	647	$280	1,215	557	395	570	680	136	938
1975–76	747	513	518	667	492	1,310	1,228	390	570	690	81	991
1976–77	745	543	626	732	552	1,408	1,947	449	697	765	160	1,298
1977–78	746	489	555	773	553	1,580	2,027	499	845	795	217	973
1978–79	805	525	703	639	596	1,805	1,913	510	701	1,004	214	1,085
1979–80	868	555	650	679	592	1,976	2,716	606	926	958	259	1,510
1980–81	840	513	806	853	558	2,091	2,842	717	819	813	275	2,314
1981–82	827	549	844	848	547	2,210	2,779	659	739	684	281	3,540
1982–83	937	535	854	884	530	2,238	2,579	641	720	675	278	2,788
1983–84	969	557	886	949	598	2,279	2,881	649	772	719	201	3,039
1984–85[3]	1,071	550	880	880	500	2,326	2,831	655	736	813	302	3,403
1985–86[3]	1,269	550	880	880	500	2,307	2,954	720	786	853	304	3,852

[1] Since aid is available from more than one Federal program, many students may have financial aid packages larger than the maximum amount of aid from any one program. Similarly, the number of recipients cannot be summed to obtain the total number of students receiving aid, because many students receive financial support from more than one Federal aid program.

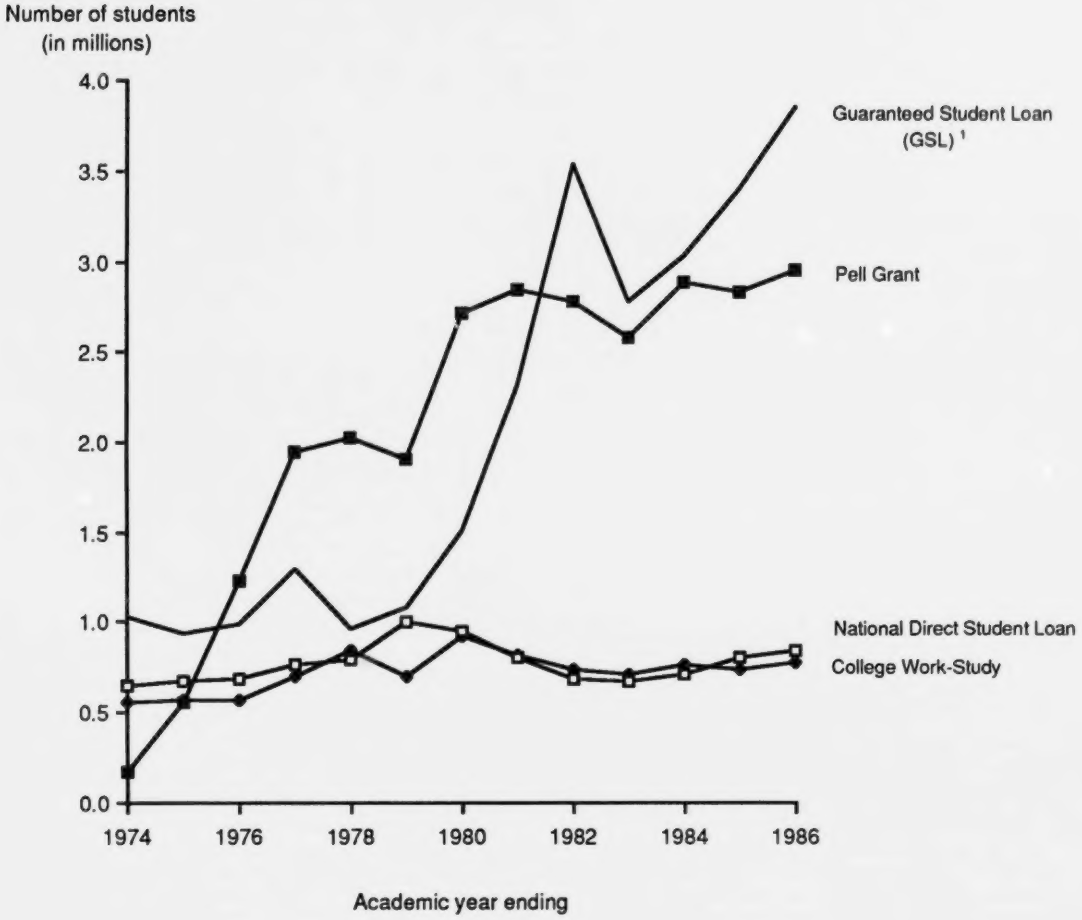
[2] The State Student Incentive Grants program had not begun.

[3] Data for these years are estimates except for the GSL program.

NOTE: Data for GSL include unsubsidized PLUS loans which began January, 1981.

SOURCE: U.S. Department of Education, Office of Postsecondary Education, unpublished tabulations, July 1986.

CHART 2:6 -- Number of students receiving Federal aid by program



(1) Includes the PLUS program beginning in 1981.

SOURCE: U.S. Department of Education, Office of Postsecondary Education, unpublished tabulations.

- The two programs experiencing the largest absolute growth in the number of recipients in the last decade are the Pell Grant and GSL programs, which together accounted for over 70 percent of all awards in 1985-86.

- In the last two years, the GSL program had the largest increase in the number of recipients, reaching record levels in 1985-86.

C. Context: Student Characteristics

Higher education enrollments by type and control of institution

Higher education institutions may be grouped according to the course of study that they predominantly offer, a 2-year versus a 4-year program, and whether they operate under public or private control. Institutions in each category address somewhat different student needs.

Between 1970 and 1983, enrollments in higher education institutions grew by 45 percent. The 1984-85 academic year was the first year in which enrollments decreased (by 1.8 percent). Over the long term, enrollments are expected to decline. The institutions with the greatest increase in students during the 1970 through 1983 period were the 2-year institutions, which more than doubled their enrollments. This fact suggests, among other things, an increasing interest in higher education by the nontraditional student. Growth of 4-year institutions has been steady over this period (up more than 1.3 million students, a 22 percent increase). The decline in enrollments between the fall of 1983 and the fall of 1985 was greatest at 2-year institutions and was larger for public than for private 2-year institutions.

Enrollments may also be measured on a full-time equivalent (FTE) basis. For private schools, percent changes in FTE enrollments during the periods presented are not considerably different from the actual enrollments presented here. For public 2-year schools, however, the 1970 through 1983 enrollment increase on an FTE basis was only 85 percent compared to the 112 percent increase in actual enrollment. The difference reflects the large number of students attending part-time.

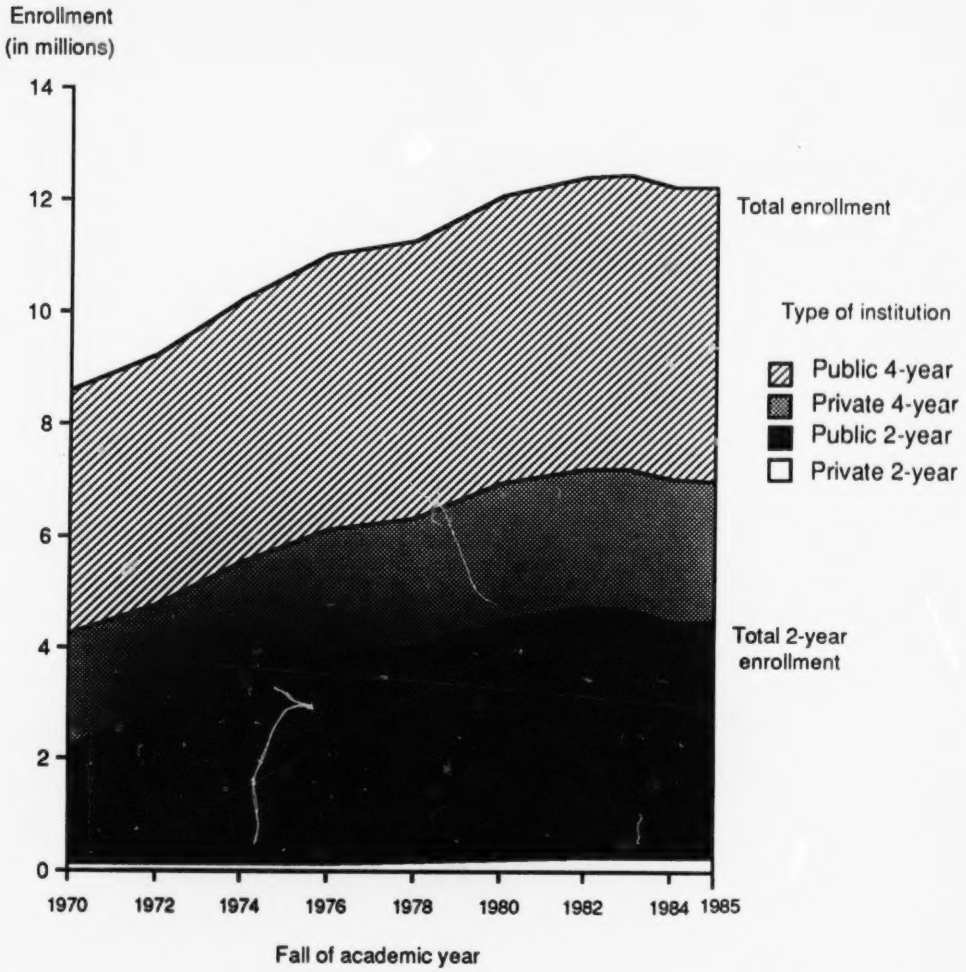
Table 2:7

Total enrollment in institutions of higher education, by type and control: 1970 to 1985

Fall of year	All institutions	Control		Type		Public		Private	
		Public	Private	4-year	2-year	4-year	2-year	4-year	2-year
	Enrollment (In thousands)								
1970	8,581	6,428	2,153	6,358	2,223	4,326	2,102	2,032	121
1972	9,215	7,071	2,144	6,459	2,756	4,430	2,641	2,029	115
1974	10,224	7,989	2,235	6,820	3,404	4,704	3,285	2,117	119
1976	11,012	8,653	2,359	7,129	3,883	4,901	3,752	2,227	132
1978	11,260	8,786	2,475	7,232	4,028	4,912	3,874	2,320	155
1980	12,097	9,457	2,640	7,571	4,526	5,128	4,329	2,442	198
1982	12,426	9,696	2,730	7,654	4,772	5,176	4,520	2,478	252
1983	12,465	9,683	2,782	7,741	4,723	5,223	4,459	2,518	264
1984	12,242	9,477	2,765	7,711	4,531	5,198	4,279	2,513	252
1985	12,247	9,479	2,768	7,716	4,531	5,210	4,270	2,506	261
Percent change, 1970–1983:	45.3	50.6	29.2	21.8	112.5	20.7	112.1	23.9	118.2
Percent change, 1983–1985:	−1.7	−2.1	−0.5	−0.3	−4.1	−0.2	−4.2	−0.5	−1.1

SOURCE: U.S. Department of Education, Center for Statistics, *Digest of Education Statistics, 1985–86.*

CHART 2:7 -- **Trends in enrollments in institutions of higher education by type and control**



SOURCE:Center for Statistics, Digest of Education Statistics, 1985-86.

- Total enrollment in institutions of higher education increased by nearly 4 million (45 percent) over the period 1970 through 1983, and declined by 1.7 percent between 1983 and 1985.

- Between 1970 and 1983, enrollment in 2-year institutions grew by 2.5 million (112 percent).

- The overall enrollment decline between 1983 and 1985 was due principally to an enrollment decline in 2-year institutions (nearly 200,000 as compared to 25,000 for 4-year institutions).

C. Context: Student Characteristics

Selected characteristics of students in higher education

Over the last decade and a half the composition of enrollments in the higher education sector has changed, possibly reflecting the changing needs of the labor force and the changing interest in higher education. The traditional college student has been usually thought of as more likely to be male than female, to go to school full-time, and to be between the ages of 18 and 24. In the fall of the 1972-73 school year, this image was matched by the data. Approximately 60 percent of those enrolled in an institution of higher education were male, two-thirds were going full-time, and about three-fourths were under the age of 25. By 1984, however, the majority of those enrolled were women, slightly more than half (58 percent) were going full-time, and over one-third were 25 years old or older.

The composition of enrollment in institutions of higher education has changed considerably with respect to sex, age, and the proportion of part-time students, while the proportion of undergraduate students has not changed substantially during the period.

Table 2:8

Trends in total enrollment in institutions of higher education, by part-time students, women, students 25 years or older, and graduate or professional students: Fall 1970 to fall 1984

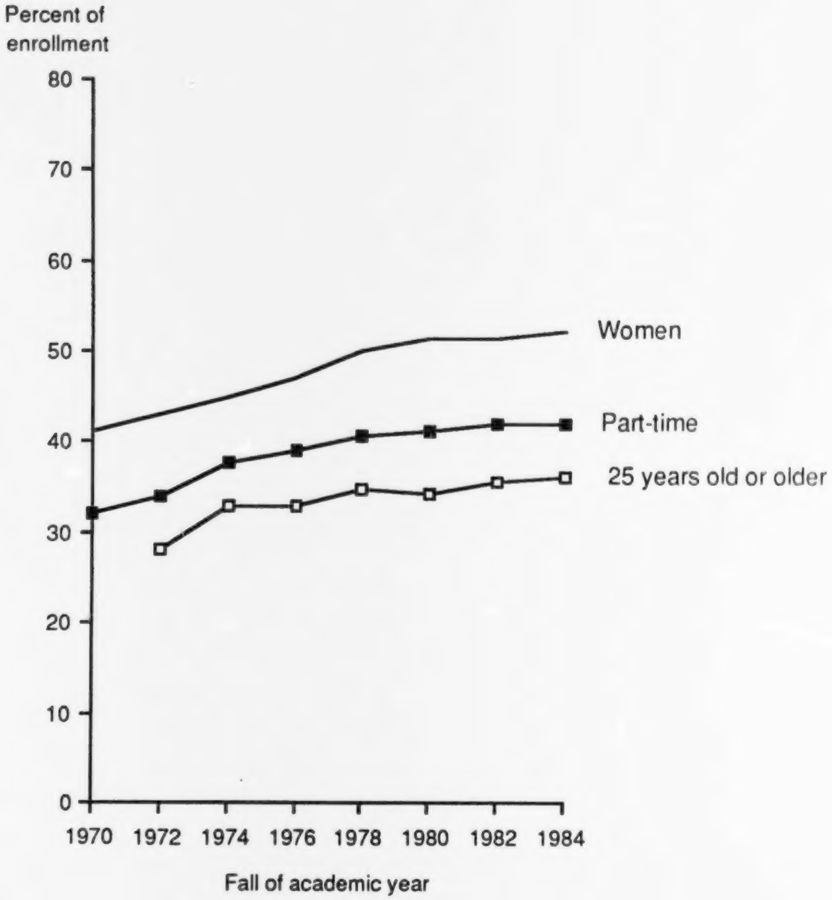
Fall of year	Total enrollment (In thousands)	Part-time students	Women students	Students 25 years or older[1]	Graduate or professional students
		Percent of total enrollment			
1970	8,581	32.2	41.2	—	14.1
1972	9,215	34.1	43.1	28.0	13.8
1974	10,224	37.7	45.0	32.8	13.9
1976	11,012	39.0	47.2	33.0	14.4
1978	11,260	40.8	49.9	34.8	14.0
1980	12,097	41.3	51.4	34.3	13.4
1982	12,426	41.9	51.5	35.6	12.9
1984	12,242	42.0	52.1	36.2	13.3

—Not available.

[1] Data on the percentages of students 25 years of age or older come from the Bureau of the Census.

SOURCES: U.S. Department of Education, Center for Statistics, *The Condition of Education, 1985 Edition*, 1985. U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, No. 404, *School Enrollments—Social and Economic Characteristics of Students: October 1984*, 1985.

CHART 2:8 -- **Higher education enrollment trends for part-time students, women, and students 25 years or older**



SOURCES: Center for Statistics, Condition of Education, 1985 Edition. Bureau of the Census, Current Population Reports, P-20, No. 404.

- Between 1970 and 1984 the proportion of part-time students in institutions of higher education increased ten percentage points, from 32 percent to 42 percent. The rate of increase slowed substantially during the late 1970's and the 1980's.

- The proportion of women enrolled in institutions of higher education increased by almost 11 percentage points, from 41 percent to 52 percent, between 1970 and 1984. The rate of increase has slowed in recent years.

- The proportion of postsecondary students who were 25 years or older increased between 1972 and 1984 by eight percentage points, from 28 to 36 percent. The rate of increase was greater in the 1970's than in the 1980's.

Participation rates for higher education by race/ethnicity

Americans have prided themselves on having one of the most democratic systems of education in the world. The goal of equal access for all qualified youth has long been held as a major objective of our educational system. A measure of the national progress toward that goal is participation rates in higher education of various populations. This indicator looks at participation rates of whites, blacks, and Hispanics aged 18-24 since 1970.

Black participation rates improved dramatically from 1973 to 1976. Hispanics also increased their participation between 1972 and 1975 although their rate remained somewhat lower than the white rate. White participation rates have increased since 1979. Black participation rates declined in the late 1970's and have been relatively stable since then. Year-to-year differences for Hispanics since 1975, however, are not statistically significant.

Caution should be used in interpreting the data presented here. The racial/ethnic definitions the Bureau of the Census uses are not mutually exclusive. Therefore, direct comparisons between Hispanics and whites or blacks are not possible. Whites and blacks are defined as racial groups, whereas Hispanics are defined as an ethnic group and can be of any race.

Table 2:9

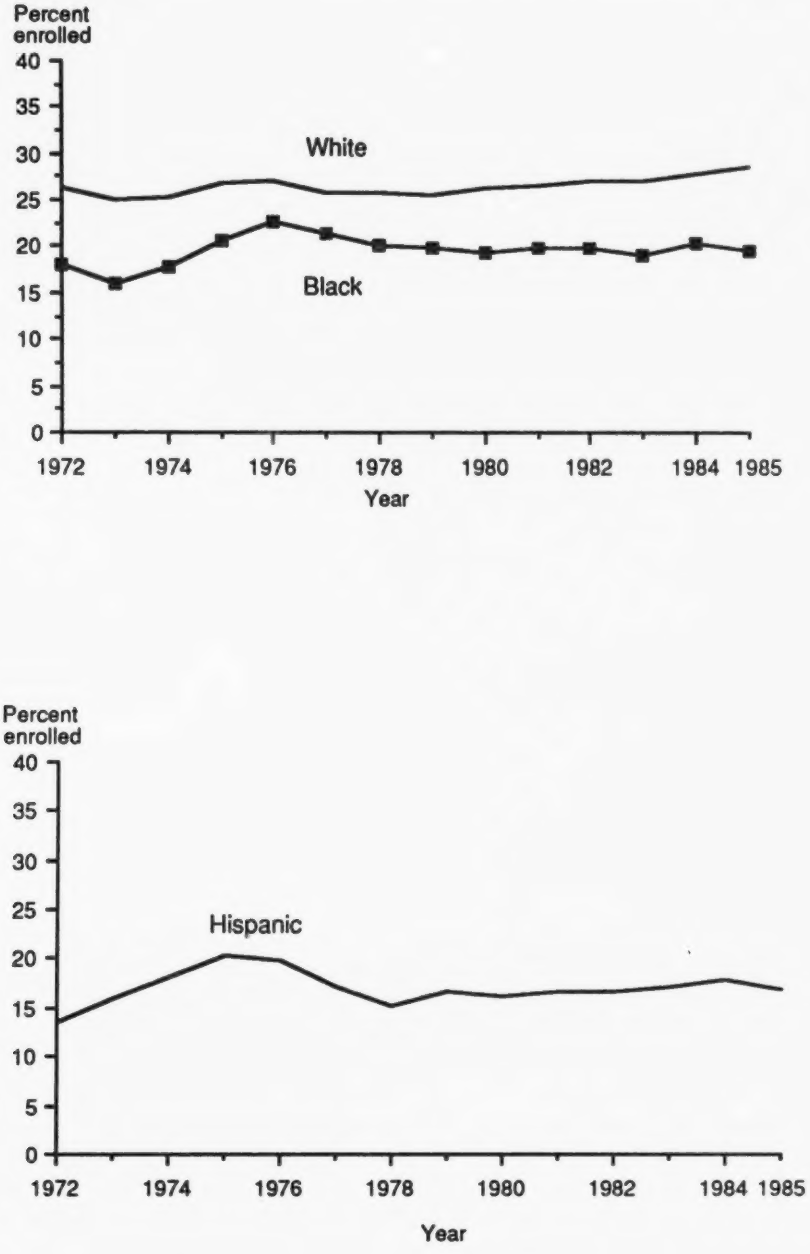
Participation rates of 18- to 24-year-olds in higher education by race/ethnicity: 1970 to 1985

Year	Racial/ethnic group		
	White	Black	Hispanic
	Percent enrolled		
1970	27.1	18.7	—
1971	27.2	18.2	—
1972	26.4	18.1	13.4
1973	25.0	16.0	16.0
1974	25.2	17.9	18.1
1975	26.9	20.7	20.4
1976	27.1	22.6	19.9
1977	26.5	21.3	17.2
1978	25.7	20.1	15.2
1979	25.6	19.8	16.6
1980	26.4	19.4	16.1
1981	26.7	19.9	16.7
1982	27.2	19.8	16.8
1983	27.0	19.2	17.2
1984	28.0	20.4	17.9
1985	28.7	19.7	16.9

—Not available.

SOURCE: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, *School Enrollments—Social and Economic Characteristics of Students:* October (Series P–20), various years.

CHART 2:9 -- **Higher education enrollment rates of 18- to 24-year-olds by race / ethnicity**



SOURCE: Bureau of the Census, Current Population Reports, P-20.

- Participation rates for minorities increased during the early 1970's.
- The proportion of blacks 18 to 24 years old attending postsecondary institutions increased after 1973, declined after 1976, and has been relatively stable since 1978.

C. Context: Perceptions

Public opinion of higher education

Institutions of higher education are favorably regarded by the public. Since 1982 the Opinion Research Corporation has conducted an annual survey entitled "Attitudes toward Higher Education" to measure the public's views on this topic. A national probability sample of approximately 1,000 respondents has been interviewed in each of the last 4 years.

The results reported here are based on two questions:

> "Whether you have or have not been to college yourself, how would you rate the overall quality of a college or university education in the United States today—excellent, good, fair, or poor?"

> "Would you say the overall quality of a college education today is generally improving, staying about the same, or generally declining?"

In each year, the majority of Americans thought that the quality of a college education in the United States was good or excellent. This assessment varied by the educational level of the respondent, with those who had attended college rating the quality of a college education more highly than those who had not attended college. Since 1983 an increasing proportion of respondents also felt that the overall quality of a college education was improving.

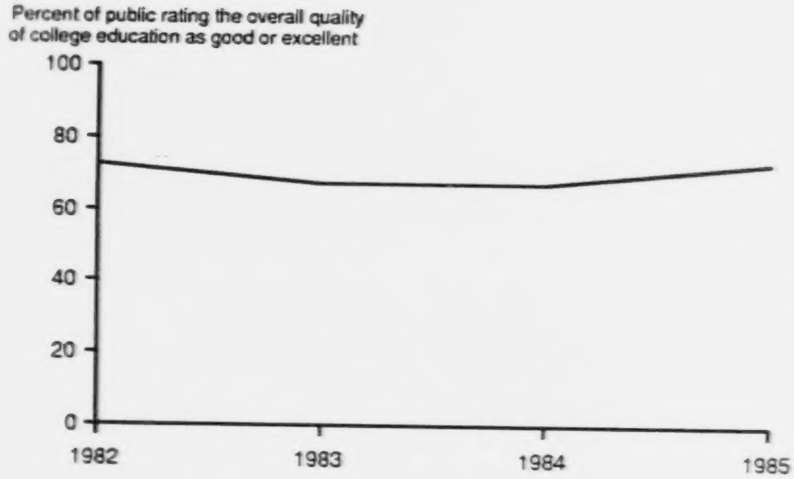
Table 2:10

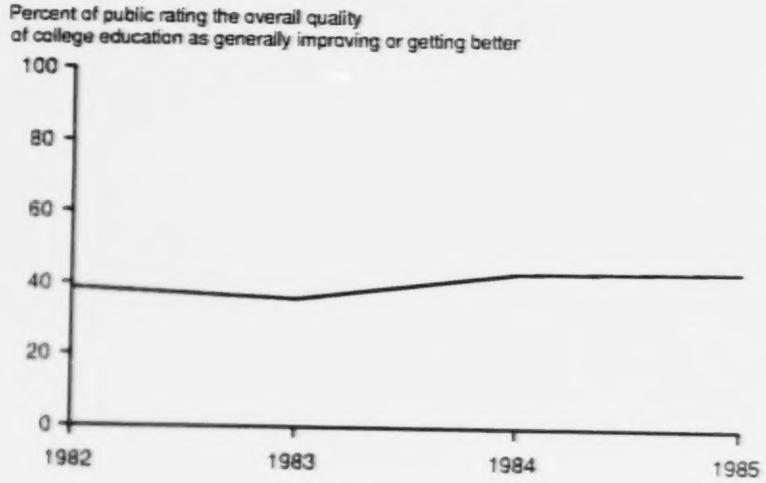
Public opinion of the overall quality of a college education in the United States: 1982 to 1985

	1982	1983	1984	1985
	Percentage responding			
Rating of the quality of a college education				
Excellent	16.9	13.5	15.6	15.5
Good	55.6	54.6	51.3	57.4
Fair	23.1	19.2	18.8	20.2
Poor	3.6	3.6	4.4	4.1
Don't know/no opinion	0.8	9.0	10.0	2.8
Trend in quality of a college education				
Generally improving, getting better	38.8	36.0	43.5	44.2
Staying about the same, not really changing	36.1	36.5	32.6	36.7
Generally declining, getting worse	23.6	16.7	13.3	15.6
Don't know/no opinion	1.5	10.8	10.6	3.5

SOURCE: Opinion Research Corporation, *American Attitudes Toward Higher Education—1985*, Princeton, New Jersey: 1985, copyrighted.

CHART 2:10 -- Public opinion of higher education





SOURCE: Opinion Research Corporation, American Attitudes Toward Higher Education-1985.

- The majority of Americans think that the quality of a college education in the United States is good or excellent.

- An increasing proportion of Americans think that the quality of a college education is generally improving.

Issue Papers

Introduction

The chapters in previous editions of *The Condition of Education* were general discussions of relatively broad topics, each organized around a large set of tables and accompanying charts. One reason for changing the format of the report was to narrow and sharpen its focus. Thus, while the indicators are analogous to the tables and charts of previous years, there are fewer of them and they were selected because they represent key features of education in the United States.

The issue papers correspond to the chapters under the old format but, like the indicators, they are more focussed than their predecessors. They are shorter and deal with narrower topics. Furthermore, they provide syntheses of findings and analyses of data on educational issues of current interest, whereas the text in previous years was usually limited to describing what was in the tables.

The central theme for the papers in this year's report is enrollment or the absence of enrollment in the case of dropouts. The theme was selected in part to serve as a transition from the old format, where enrollment trends were a major topic. Four papers discuss enrollment trends—preschool, public elementary and secondary, private school, and postsecondary. The four papers together present a comprehensive picture of recent enrollment trends in American education. Some of the topics were also chosen because they represent policy issues of current interest—dropouts—or because of the availability of new data—1985 data from the Current Population Survey on private school enrollment and tuition.

Preschool Enrollment: Trends and Implications

by Audrey Pendleton

Overview

Preschool enrollment has risen dramatically during the 1970's and 1980's and is expected to continue to rise in the next decade. While preschool programs are most effective for disadvantaged children, preschool enrollment rates have been higher among the more affluent segments of society. However, there is increasing interest in providing public preschool programs for disadvantaged 4-year-olds.

This paper examines trends over time in enrollment patterns for 3- and 4-year-olds; most 5-year-olds are enrolled in either kindergarten or first grade. It looks at family characteristics associated with preschool enrollment and how those characteristics might be related to past increases in preschool enrollment. The implications of these patterns of preschool enrollment are discussed in conjunction with expected changes in the demographic characteristics of preschool children in the coming decade. The major findings are:

Enrollment Trends

- The number of 3- and 4-year-olds enrolled in preschool increased steadily between 1970 and 1985, even though the size of that age group declined for part of the period, because larger proportions of children were enrolled.

- Preschool enrollment is projected to continue to increase during the next decade due both to an increasing number of children in this age group and to increases in the proportion enrolled in preschool.

Family Characteristics

- Enrollment rates for black 3- and 4-year-olds are very similar to those for white children.

- Black children are more likely to attend publicly operated preschools than white children. The proportion of preschool students in public rather than private schools declines as income rises.

- The likelihood of preschool attendance for 3- and 4-year-olds rises with family income. For white children, the largest increases in enrollment rates between 1975 and 1984 occurred for high-income families.

- For black children, enrollment rates are much higher for children whose mothers work full time than for those with nonworking mothers. Among white children, those whose mothers work part time are the most likely to attend preschool.

- For white 3-year-olds, increased enrollment rates may be related to rising proportions of mothers in the labor force. However, for 4-year-olds, higher enrollment rates reflect increases for children of nonworking mothers.

Implications

- Differences in school readiness among kindergarten and first-grade students may be increasing as substantial proportions of children have had preschool experience while many others have not.

- Further accentuating the challenge to the schools of meeting the needs of their diverse student bodies are differences in the family backgrounds of students who have and have not attended preprimary school. Preschool attendance is higher and increasing for children from affluent families.

Data

While there is a wide variety of settings in which preschool-age children are socialized and educated, the only national data that allow an analysis of trends over time relate to preschool enrollments and come from the School Enrollment Supplement to the Current Population Survey (CPS) in October of each year. The CPS question regarding school enrollment for 3- and 4-year-olds is phrased "Is (the child) attending or enrolled in nursery school or kindergarten?" Only if the respondent voices some doubt about what constitutes school enrollment does the interviewer provide any further explanation about what is meant by school enrollment. The interviewer's instructions state that school enrollment consists of attendance or enrollment

> "in any type of regular or special school, whether day or night, public or private for at least two hours per day. . . . A nursery school is a group or class that is organized to provide education experiences for children

> during the year or years preceding kindergarten. These sometimes are called 'preschool groups' or 'prekindergarten.' A nursery class may be organized as part of an elementary school or as a separate school. Private homes in which essentially custodial care (babysitting) is provided for one or more children are *not* considered nursery schools. The nursery school, as defined here, includes instruction as an important and integral phase of its program of child care" (U.S. Department of Commerce, 1982).

People may respond to the CPS item based on varying interpretations of what constitutes a nursery school or instruction.

- Some may consider a wide range of settings and activities as schools.
- Others may respond on the basis of a more limited definition, such as a program of formal instruction in a school setting.

The CPS definition forces a dichotomy between child care and education at a time when there is increasing awareness that there is a great deal of overlap between the two. While children have a wide range of preschool group experiences, most include both child care and educational aspects. The ambiguity as to what constitutes school enrollment is exemplified by the concern of many early childhood specialists about the appropriate type of program for preschool children. Some educators believe that preschoolers are ready to begin formal schooling, while others feel that preschool programs should be based on children's need for mental, physical, and social activity and must revolve around play activities (Seefeldt, 1985; Zigler, in press).

Trends in Preprimary Enrollment

The number of 3- and 4-year-olds enrolled in school rose steadily during the 1970's despite a decline during the late seventies in the size of the age group. The enrollment growth reflected an increase in the *rate* of preschool enrollment for this age group between 1970 and 1985, from 21 percent to 39 percent (Figure 1).

- Four-year-olds are more likely than 3-year-olds to be enrolled in preschool.
- The majority of both 3- and 4-year-olds who are enrolled attend private school.
- A larger proportion of 4-year-olds who are enrolled attend public school than 3-year-olds, but that difference narrowed between 1970 and 1984 (U.S. Department of Education, 1985a).

In the early 1980's, the growth in the numbers of 3- and 4-year-olds enrolled in school has been fueled by both larger population size and higher enrollment rates. Both factors are expected to result in continued increases in the number of 3- and 4-year-olds enrolled in preprimary school during the next decade (U.S. Department of Education, 1985a, 1985b).

Several factors may have contributed to the increasing rates of preprimary school attendance. One is an increasing awareness of children's learning potential in early childhood (Berruta-Clement et al., 1984; Bloom, 1964; Lazar and Darlington, 1982; Piaget, 1969).

Another factor often cited is the rise in the labor force participation of women. The proportion of married women with children under the age of 6 who work rose from 30.3 percent in 1970 to 51.8 percent in 1984 (U.S. Department of Commerce, 1985). While rising labor force participation has increased the need for child care services, that care does not necessarily involve participation in preschool. Indeed, only 15 percent of employed mothers with children under the age of 5 used group care centers as their principal child care arrangement in 1982; an additional 13 percent used group care centers as a secondary child care arrangement (U.S. Department of Commerce, 1983).

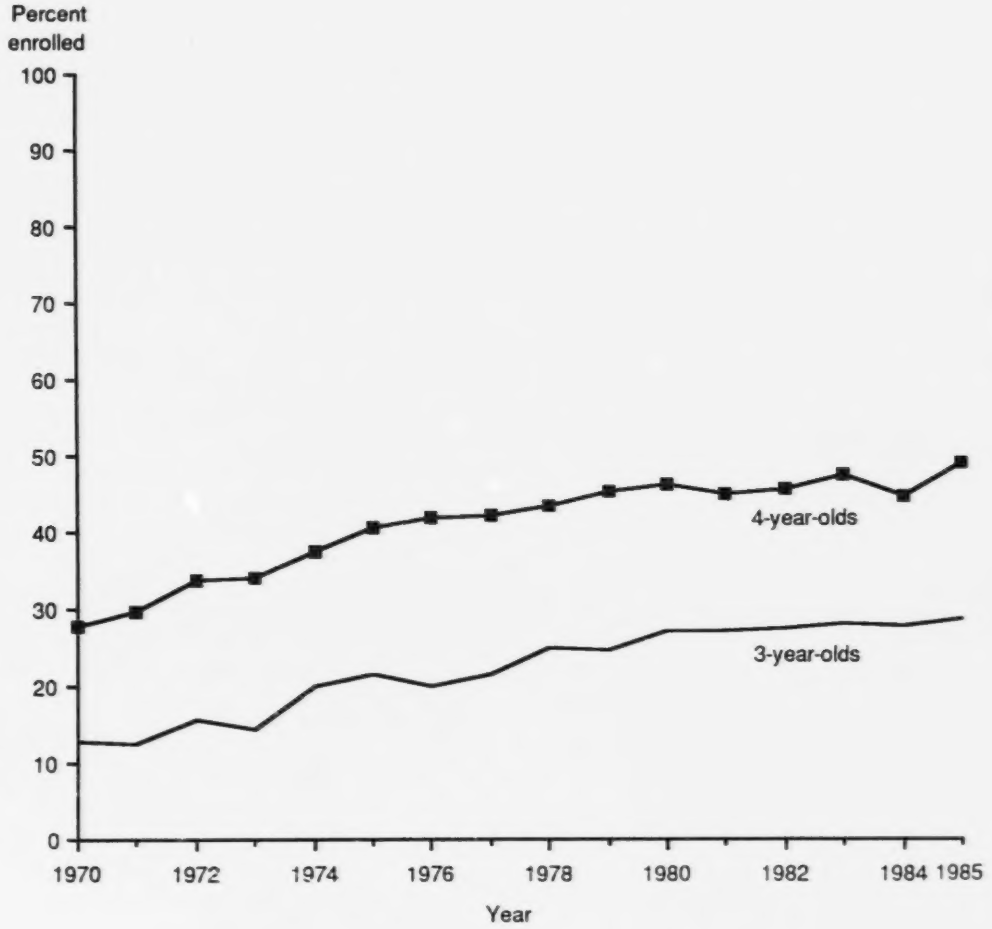
The next two sections investigate family characteristics, including working status of the mother, as possible predictors of enrollment in a preschool program. The first examines such patterns for 1984 and the second investigates changes between 1975 and 1984. Because of differences in enrollment patterns for 3- and 4-year-olds, the analysis will often be displayed separately for the two ages.

Family Background and Preschool Attendance

1984 patterns

Race and Income. Preschool attendance rates for 3- and 4-year-olds are not significantly different for

FIGURE 1 -- **Trends in school enrollment of 3- and 4-year-olds**



SOURCE: U.S. Department of Education, National Center for Education Statistics, *Preprimary Enrollment*, various years. U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, various years, and unpublished data.

blacks and whites.[1] However, there are differences in the types of schools they attend (Table 1).

- Black children are more likely than whites to be enrolled in public preschool at all levels of family income.

- At both age 3 and 4, for blacks the proportion of preschool attendance in public school is approximately twice that for whites—one-half vs. one-fourth for age 3 and two-thirds vs. one-third for age 4.

Income is likely to be related to preschool attendance patterns for two reasons. As an indicator of general socioeconomic status, it may be linked to the probability that a child will be enrolled in a preschool program. In addition, because of the cost factor involved in private schools and eligibility criteria for some public programs, income may be related to the choice of a public or private preschool. Both patterns appear in the data presented in Table 1.

For white children, there is a strong relationship between income and preschool enrollment patterns for both 3- and 4-year-olds.

- As income rises, so does the likelihood that a child will be enrolled in preschool.

- The proportion of preschool students who are attending a private school also increases with income.

Relationships between family income and preschool enrollment exist for black children, but are not as strong as for whites.

- School enrollment increases with income for black 3-year-olds, but not for 4-year-olds.

- The likelihood of enrollment in a private school increases with income, particularly for black 3-year-olds.

The differences in enrollment rates between blacks and whites at the same income level in Table 1 should be viewed cautiously. The sample of black children is small, and the differences are not statistically significant.[2]

The relationships between school enrollment rates and other measures of socioeconomic status, such as educational attainment of the head of household, are very similar to the patterns observed between school enrollment and family income for both whites and blacks. As socioeconomic status rises, so does the likelihood that a child will be enrolled in preschool and that the preschool will be a private school.

Table 1

Percent of 3- and 4-year-olds enrolled in preschool by family income, control of school, race, and age: 1984

Family income and control of school	White		Black	
	Age 3	Age 4	Age 3	Age 4
Total	28.5	48.9	34.3	44.1
Public	7.4	16.0	19.1	27.9
Private	21.1	32.9	15.3	16.2
Less than $10,000	14.6	34.7	24.8	40.0
Public	9.7	22.9	21.1	31.8
Private	4.9	11.8	3.7	8.2
$10,000–$19,999	17.4	37.9	35.8	47.6
Public	6.4	15.5	14.7	23.2
Private	11.0	22.4	21.1	24.4
$20,000 and over	37.9	57.8	51.5	47.8
Public	7.2	14.2	15.0	24.2
Private	30.7	43.6	36.5	23.6

NOTE: Detail may not add to total due to rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1984, special tabulations.

While there may be no difference in preschool programs between public and private schools, several researchers (Coleman et al., 1966; Zigler, in press) have suggested that there are educational advantages to mixed socioeconomic and racial settings. The pattern of public and private preschool enrollments presented here, with disadvantaged children enrolling in public school and more affluent children enrolling in private school, does not bring together children from diverse social and ethnic backgrounds.

Mother's labor force participation. The increased labor force participation of mothers with young children is often cited as a major factor in rising preprimary school enrollment. Mother's work status is related to a child's preschool attendance, but the relationships are somewhat complicated (Table 2).

- White 3-year-olds whose mothers work *part* time are the most likely to attend preschool. Those whose mothers work full time are more likely to be enrolled than those whose mothers do not work.
- Among white 4-year-olds, children whose mothers work part time are more likely to be enrolled than those whose mothers work full time. There is no difference in the likelihood of school enrollment between those whose mothers work full time and those whose mothers do not work at all.

The school enrollment patterns of black 3- and 4-year-olds are more consistent with the hypothesis that labor force participation of women is related to preschool enrollment.

- Black children whose mothers work full time have substantially higher rates of preschool enrollment than those whose mothers do not work.
- It is not possible to look at the preschool enrollment patterns of black children whose mothers work part time due to the small sample size.

The availability of preschool programs, particularly full-day programs, may be a factor in the preschool enrollment of children whose mothers are employed. It may also affect the likelihood of employment for mothers of preschool-aged children and whether they work full or part time. If part-day preschool programs are more readily available than full-day programs, families may opt for full-day care in other settings. However, there are no national data on the demand for or availability of preschool programs.

Whether preschool students are enrolled in school full- or part-day is associated with the work status of the mother for both black and white children (Table 3).

Table 2

Percent of 3- and 4-year-olds enrolled in preschool by mother's work status, control of school, race, and age: 1984

Mother's work status and control of school	White		Black	
	Age 3	Age 4	Age 3	Age 4
Not working	21.7	48.2	27.3	36.8
Public	7.2	18.3	21.6	30.2
Private	14.5	30.0	5.6	6.7
Working full time	33.1	46.6	46.6	59.9
Public	6.1	14.0	14.5	28.0
Private	27.0	32.7	32.1	31.9
Working part time	41.8	56.0	—	—
Public	10.3	15.0	—	—
Private	31.5	41.0	—	—

—Not included due to small sample size.

NOTE: Detail may not add to total due to rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1984, special tabulations.

Table 3

Percent of 3- and 4-year-old preschool students enrolled full day by mother's work status and race: 1984

Mother's work status	White	Black
Not working	12.1	47.8
Working full time	56.9	74.8
Working part time	20.2	—

—Not included due to small sample size.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population urvey, October 1984, special tabulations.

- Children with full-time working mothers are considerably more likely to attend preschool for the full day than children whose mothers are not working or are working part time.

- However, approximately half the white children whose mothers work full time are enrolled in school only part day.

- For each category of work status, black children are more likely than white to be enrolled full day.

Perhaps ambiguity as to what is considered a full- versus part-day program accounts in part for the second finding. A respondent to the CPS may consider a group program of instruction in the morning and child care in the afternoon as either a full- or part-day program. However, it may also be that part-day preschool programs are more available than full-day programs. It may be easier for a full-time working mother to find a single provider for full-day child care than to organize multiple child care arrangements that include a part-day preschool program.

However, there is some evidence from the June 1982 Current Population Survey that many working mothers have multiple child care arrangements. Of children under 5 years of age whose principal child care arrangement was in a group care center (including nursery schools and day-care centers), 20 percent also had a secondary source of care while the mother was working. The secondary source of child care was the father in 14 percent of the cases and another relative in 51 percent of the cases (U.S. Department of Commerce, 1983).

Single-parent households. Another factor thought to be related to preschool attendance is whether or not both parents are present in the household. The presence of two parents may affect both the likelihood of the mother's employment and the level of family income. In this sample of 3- and 4-year-olds, being a single parent (widowed, divorced, separated, or never married) increases the likelihood of working for white mothers, but not for black mothers. The family income in single-parent households is much lower than in households where both parents are present.

In spite of the differences in work status and family income between single mothers and mothers who are married with the husband present, the mother's marital status generally is not related to school enrollment rates or full- vs. part-day attendance for white and black 3- and 4-year-olds. However, for some subgroups (whites with nonworking mothers and blacks with full-time working mothers), children are more likely to attend a private preschool when their mother is married, spouse present, than when their mother is a single parent (Table 4).

The Current Population Survey cannot provide direct insights about the factors contributing to the increase in preprimary enrollment, since the data represent enrollment patterns at single points in time. However, some clues about possible contributory factors may be gained by comparing such patterns over time. In the next section, the family characteristics used in the analysis of 1984 enrollment patterns will be related to preschool enrollment in 1975 and the patterns in the 2 years will be compared.[3]

Changes from 1975 to 1984

The analysis of factors related to the changes in preprimary school enrollment of 3- and 4-year-olds which follows is based on data from the School Enrollment Supplement to the Current Population Sur-

Table 4

Percent of 3- and 4-year-olds enrolled in preschool by mother's work status, control of school, race, and mother's marital status: 1984

	White		Black	
Mother's work status and control of school	Married, husband present	All others	Married, husband present	All others
Not working	35.5	31.1	30.9	32.2
Public	11.7	22.0	25.1	26.0
Private	23.9	9.1	5.9	6.3
Working full time[1]	40.3	36.2	55.6	50.9
Public	9.6	11.8	16.9	25.7
Private	30.7	24.5	38.7	25.2

[1] Working part time not included due to small sample size.

NOTE: Detail may not add to total due to rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1984, special tabulations.

veys of October 1975 and 1984. The results are presented for white children only. The relationships between the factors examined in the previous section and school enrollment rates for black children are consistent in all years analyzed. However, the actual levels of enrollment for black children reported for various years are somewhat erratic. The standard errors are also large, rendering many of the differences between 1975 and 1984 statistically insignificant.

Preprimary school enrollment rates increased substantially for white children between 1975 and 1984, from 22 percent to 28 percent for 3-year-olds and from 41 to 49 percent for 4-year-olds (Table 5). This increase in total preprimary school enrollment reflects rises in both public and private school enrollment for 3-year-olds, but for 4-year-olds the increase was entirely attributable to higher private school enrollment.

Income. In the preceding section, family income was shown to be related in 1984 both to the likelihood of preschool enrollment and to whether that enrollment was in a public or private setting. Children from families with higher incomes were more likely to be enrolled in preschool and more likely to be enrolled in private schools than children from lower income families.

Between 1975 and 1984 there was a significant change in family income levels for preschool-aged children. In 1975, 11 percent of white 3- and 4-year-olds had a family income under $5,000 (the poverty level for a nonfarm family of four was $5,500). By 1984, 17 percent had a family income under $10,000 (the poverty level was $10,609). A larger proportion of white preschool children were living in poverty in 1984 than in 1975, but there was no change in the preschool enrollment rates for poor children between 1975 and 1984.

- Preschool enrollment increased sharply in the highest income category for both 3- and 4-year-olds.

- Enrollment also increased for 4-year-olds in families with incomes just above the poverty level (Table 5).

Thus the rise in preschool participation for white children has been more characteristic of higher income segments of society.

Labor force participation. Between 1975 and 1984 the proportion of white mothers working full time rose by about one-half for both 3- and 4-year-olds, and almost doubled at higher levels of family income. The proportion of 3-year-olds whose mothers worked part time also increased by about one-half. The higher labor force participation of women with young children is often cited as a factor in rising preprimary school enrollment. The CPS data suggest this is only partially true (Table 6).

- Attendance rates are generally higher for children with working mothers, especially for 3-year-olds.

- However, the only significant increase in enrollment rates between 1975 and 1984 was for 4-year-olds whose mother did not work.

For 3-year-olds, the increase in enrollment rates may be associated with *changes in the work status of mothers*, but this is not the case for 4-year-olds. There is no difference in the 1984 enrollment rates between 4-year-olds whose mothers do not work and those whose mothers work full time.

- The increase in enrollment rates for 4-year-olds reflects *rising enrollment rates for children of nonworking mothers*.

Single-parent households. The presence of two parents in the household is thought to be related to preschool enrollment through associations with the likelihood of the mother's employment and the level of family income. While both divorce rates and rates of premarital pregnancy have risen in recent years, CPS data show that among all households containing white 3- and 4-year-old children, the proportion of mothers who were married with spouse present did not change significantly between 1975 and 1984 (90 and 88 percent respectively). This pattern is consistent with research reporting a relatively low likelihood of divorce for parents with preschool-aged children (Glick, 1979).

- Enrollment rates of children whose mothers were married, husband present, and those whose mothers were single parents did not differ in 1975 or 1984.

- The only increase in preschool enrollment rates between 1975 and 1984 was for children whose mother was married, husband present, and not working (Table 7).

Implications

The factors associated with increasing preprimary school enrollment for white children were somewhat unexpected. Increases in enrollment rates of 3- and 4-year-old children for the most part occurred in families at upper income levels. For 3-year-olds, the increasing labor force participation of women was associated with increased preprimary school enrollment. However, that was not the case for 4-year-olds. While more mothers of 4-year-olds worked in 1984 than in 1975, the children of full-time working mothers were no more likely to be enrolled in school than those of

Table 5

Percent of white 3- and 4-year-olds enrolled in preschool by family income and age: 1975 and 1984

1975			1984		
Family income	Age 3	Age 4	Family income	Age 3	Age 4
Total	21.9	40.6	Total	28.5	48.9
Less than $5,000	12.7	32.2	Less than $10,000	14.6	34.7
$5,000–$9,999	14.3	27.6	$10,000–$19,999	17.4	37.9
$10,000–$14,999	20.9	40.1	$20,000–$29,999	23.7	47.2
$15,000 and over	32.3	53.4	$30,000 and over	48.9	65.9

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1975 and 1984, special tabulations.

Table 6

Percent of white 3- and 4-year-olds enrolled in preschool by mother's work status and age: 1975 and 1984

	1975		1984	
Mother's work status	Age 3	Age 4	Age 3	Age 4
Not working	18.2	37.5	21.7	48.2
Working full time	28.5	45.5	33.1	46.6
Working part time	32.5	47.2	41.8	56.0

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1975 and 1984, special tabulations.

Table 7

Percent of white 3- and 4-year-olds enrolled in preschool by mother's work status and mother's marital status: 1975 and 1984

	1975		1984	
Mother's work status	Married, husband present	All others	Married, husband present	All others
Not working	27.9	28.4	35.5	31.1
Working full time[1]	36.7	43.0	40.3	36.2

[1] Working part time not included due to small sample size.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1975 and 1984, special tabulations.

nonworking mothers. In fact, it was 4-year-olds whose mothers did not work whose enrollment rates rose from 1975 to 1984.

Among 4-year-olds, factors other than increasing labor force participation of mothers account for rising preschool enrollment rates. An awareness of the educational value of preschool programs may have been a contributing factor.

Concerns about the development of social skills may also have been an element in increasing preschool enrollment. As family size has declined in recent years, there may be fewer children, not only in the home, but also in the neighborhood, available as playmates. Preschool can provide an opportunity for children to interact with others of the same age, when that opportunity is lacking in the immediate social environment.

A mother's full-time employment may make child care arrangements more difficult. The findings suggest a potential need for more full-day preschool opportunities. Among white 3-year-olds, those with mothers working part-time are most likely to be enrolled in school. While a mother's working full time increases the likelihood that a white child is enrolled for the full day, approximately half of the children with full-time working mothers attend part-day.

The findings presented here suggest a widening range in school readiness for young children. Increasing numbers of children are learning in preschool many of the social, developmental, and academic skills that have traditionally been taught in kindergarten or first grade. Many other children enter elementary school with no preschool experience. This may pose a challenge to the Nation's elementary schools: adapting to the needs of an increasingly diversified group of kindergarten and first grade students. Some students enter elementary school, for example, able to write their names, speak clearly, share toys with other children, use scissors, and read at least a few words, while other children can do none of these things. Further accentuating that challenge are differences in family background between children who attend preprimary school and those who do not.

Researchers in the field of early childhood education are recommending preschool programs for economically disadvantaged children, handicapped children, and non-English-speaking children (Zigler, in press). Although preschool programs have been shown to be most effective for economically disadvantaged children (Berruta-Clement, Schweinhart, Barnett, Epstein, and Weikart, 1984; Irvine, Flint, Hick, Horan, and Kikuk, 1982) and the proportion of such children is growing (Kaufman, 1986), the majority of poor children are not enrolled in preschool programs.

- Head Start estimates that it currently serves one out of every six eligible children (Administration for Children, Youth and Families, 1985).
- Early childhood specialists also recommend preschool programs for non-English-speaking children, but Hispanic 3-year-olds are only half as likely to be enrolled in preschool as white and black 3-year-olds.
- At the same time, the likelihood of preschool enrollment is high and is increasing for children in families of higher socioeconomic status.

If these trends continue, differences in school readiness among population subgroups may increase in coming years. A development which could counter this trend is the growing interest at State and local levels in preschool programs for the disadvantaged (Ambach, 1985; National Governors' Association, 1985). A survey conducted in 1985 revealed that 19 States have demonstration programs for 4-year-olds. Typically, these were Federally funded and were targeted at specific groups, notably handicapped and low-income children. In addition, several States have program initiatives that extend beyond demonstration projects and involve significant funding (Kagan, 1985).

Footnotes

[1] While preschool programs have been recommended for non-English-language children, the 15 percent enrollment rate for Hispanic 3-year-olds is half that of white and black 3-year-olds. Thirty-four percent of Hispanic 4-year-olds are enrolled in preschool. Hispanic children tend to be enrolled in public programs: for 3-year-olds, 9 percent attend public preschool programs and 6 percent are in private preschools, and for 4-year-olds, 25 percent and 9 percent attend public and private preschools respectively. Due to the small sample of Hispanics, the examination of family characteristics associated with preschool attendance is limited to non-Hispanic whites and blacks.

[2] Table 1 demonstrates one drawback to the use of the Current Population Survey for this analysis: the relatively small size of the sample of 3- and 4-year-olds. (See Table A1 for sample sizes.) As a result, the standard errors of estimates are often large. Differences between subgroups that may appear substantial to the reader may in fact not be statistically significant.

[3] Data from the School Enrollment Supplement to the October 1982 Current Population Survey were also analyzed. Patterns of preschool enrollment are very similar for 1982 and 1984.

Appendix

Definitions and Explanations

Full or part day. Part-day attendance refers to children who attend either in the morning or in the afternoon, but not both. Full-day attendance refers to those who attend both in the morning and afternoon. It is possible for a child to be enrolled in school full day, but less than five days per week.

Family income. Income represents the annual total money income of the family before deductions for personal taxes, Social Security, bonds, etc. For this analysis, family income was grouped based on the unweighted frequency distributions by race, the poverty level cutoffs, and the Consumer Price Indices for 1975 and 1984. The poverty level cutoff for a nonfarm family of four was $5,500 in 1975 and $10,609 in 1984. The Consumer Price Index for urban areas showed a comparable change, rising from 161.2 in 1975 to 311.1 in 1984. In 1975, 10.5 percent of white families containing 3- and 4-year-old children had an income under $5,000, 21.8 percent had an income of $5,000 to $9,999, 32.8 percent an income of $10,000 to $14,999, and 29.1 percent had an income of $15,000 or more.

The dollar amount of the family income categories for 1975 was doubled based on the change in the poverty level cutoffs and the Consumer Price Indices in order to obtain income categories for the 1984 data. The result was a reasonably similar distribution of the unweighted sample of white families with 3- and 4-year-old children in 1984 for analysis purposes. Sixteen percent of such white families had an income less than $10,000, 28 percent had an income of $10,000 to $19,999, 33.5 percent an income of $20,000 to $29,999, and 19.4 percent had an income of $30,000 or more. The unweighted distribution of black families containing 3- and 4-year-old children by family income in 1984 was 51.6 percent with an income under $10,000, 25.6 percent with an income of $10,000 to $19,999, and 20.5 percent with an income of $20,000 or more. Family income was not reported for 5.8 percent of such white families in 1975 and 3.1 percent in 1984, or for 2.3 percent of black families in 1984.

Mother's work status. The mother of the children in this analysis cannot be positively identified since the Current Population Survey is a sample of households and the record for each person contains the relationship to the head of household. The person in the household identified here as the mother is either the spouse of a male head of household or a female head of household. This operationalization is reasonable for white children, of whom 93 percent were the own child of the head of household, but less valid for black children, of whom only 79 percent were the own child of the head of household in 1984. Another 5 percent of white children and 19 percent of black children were another relative of the head of household. Both white and black children are less likely to be the own child of the head of household when the head is female than when the head is male. Detailed relationship to the head of household was not available for 1975.

The "not working" category of mother's work status includes women who were not in the labor force and those who were unemployed. "Working full time" includes those working 35 or more hours per week, and "working part time" includes those working less than 35 hours per week.

Single-parent households. The person identified as the head of the household, and referred to as a parent, is not necessarily related to the 3- or 4-year-olds of interest. Ninety-three percent of white children and 79 percent of black children were the own child of the head of household in 1984. An additional 5 percent of white children and 19 percent of black children were another relative of the head of household. Detailed relationships to the head of household were not available for 1975. While single parents are not necessarily mothers, all the households containing 3- and 4-year-old children in both the October 1975 and 1984 samples included either (1) the wife of a male head of household who was married, spouse present or (2) a female head of household who was not married, spouse present, (i.e., married, spouse absent—including separated; divorced, widowed, or never married).

School enrollment. Children who were reported as enrolled in school had attended or been enrolled in any type of regular or special school, including nursery school and kindergarten, for at least 2 hours per day at any time during that term or school year. A nursery school is defined by the Bureau of the Census as ". . . a group or class organized to provide educational experiences for children during the year or years preceding kindergarten. . . . A nursery class may be organized as part of an elementary school or as a separate school. Private homes in which essentially custodial care (babysitting) is provided for one or more children are *not* considered nursery schools. The nursery school, as defined here, includes instruction as an important and integral phase of its program of child care." It should be noted that the item on the questionnaire regarding school enrollment was phrased "Is (the child) attending or enrolled in nursery school or kindergarten?" The definition was not routinely given unless the respondent voiced some doubt as to what constituted school enrollment.

Reliability of Estimates

All comparisons cited in the text are statistically significant at the 0.05 level of significance. This means that the difference between two sample estimates is greater than 1.96 times the standard error of the difference.

Table A1

Standard errors (and unweighted numbers) for Table 1: Percent of 3- and 4-year-olds enrolled in preschool by family income, control of school, race, and age: 1984

Family income and control of school	White		Black	
	Age 3	Age 4	Age 3	Age 4
Total	1.3	1.5	3.4	3.5
Public	0.8	1.1	2.9	3.2
Private	1.3	1.4	2.5	2.5
N	(1818)	(1808)	(352)	(307)
Less than $10,000	2.5	3.7	4.3	4.7
Public	2.4	3.5	4.3	4.4
Private	1.8	2.4	1.3	2.2
N	(301)	(281)	(178)	(162)
$10,000–$19,999	2.2	2.8	6.6	7.3
Public	1.3	2.2	5.0	6.3
Private	1.8	2.5	5.7	6.3
N	(515)	(501)	(88)	(81)
$20,000 and over	2.5	2.0	8.3	8.3
Public	1.0	1.5	5.1	7.2
Private	1.9	2.1	7.5	7.2
N	(949)	(968)	(78)	(57)

Table A2

Standard errors (and unweighted numbers) for Table 2: Percent of 3- and 4-year-olds enrolled in preschool by mother's work status, control of school, race, and age: 1984

Mother's work status and control of school	White		Black	
	Age 3	Age 4	Age 3	Age 4
Not working	2.3	2.4	4.5	4.8
Public	1.1	1.9	4.5	4.6
Private	1.7	2.1	2.3	2.3
N	(907)	(876)	(182)	(142)
Working full time	2.6	3.0	6.3	5.9
Public	1.3	1.8	4.3	5.4
Private	2.5	2.8	5.6	5.6
N	(522)	(511)	(124)	(120)
Working part time	3.3	3.4	—	—
Public	2.1	2.1	—	—
Private	3.1	3.4	—	—
N	(329)	(359)	(30)	(34)

—Not included due to small sample size.

Table A3

Standards errors (and unweighted numbers) for Table 3: Percent of 3- and 4-year-old preschool students enrolled full day by mother's work status and race: 1984

Mother's work status	White	Black
Not working	1.8	6.3
N	(576)	(109)
Working full time	3.4	5.4
N	(373)	(124)
Working part time	2.9	—
N	(312)	(25)

—Not included due to small sample size.

Table A4

Standard errors (and unweighted numbers) for Table 4: Percent of 3- and 4-year-olds enrolled in preschool by mother's work status, control of school, race, and mother's marital status: 1984

	White		Black	
Mother's work status and control of school	Married, husband present	All others	Married, husband present	All others
Not working	1.4	4.4	5.6	4.1
Public	1.0	4.3	5.4	3.9
Private	1.3	3.0	2.8	2.0
N	(1584)	(199)	(128)	(196)
Working full time	2.3	4.5	6.1	6.3
Public	1.4	3.0	4.3	5.4
Private	2.0	4.3	5.8	5.4
N	(862)	(171)	(125)	(119)
Working part time	—	—	—	—
Public	—	—	—	—
Private	—	—	—	—
N	(641)	(47)	(30)	(34)

—Not included due to small sample size.

Table A5

Standard errors (and unweighted numbers) for Table 5: Percent of white 3- and 4-year-olds enrolled in preschool by family income and age: 1975 and 1984

1975			1984		
Family income	Age 3	Age 4	Family income	Age 3	Age 4
Total	1.1	1.1	Total	1.3	1.5
N	(1984)	(2204)	N	(1818)	(1808)
Less than $5,000	2.5	3.8	Less than $10,000	2.5	3.7
N	(162)	(167)	N	(301)	(281)
$5,000–$9,999	1.7	2.5	$10,000–$19,999	2.2	2.8
N	(341)	(361)	N	(515)	(501)
$10,000–$14,999	1.8	2.0	$20,000–$29,999	3.0	3.5
N	(500)	(555)	N	(427)	(426)
$15,000 and over	2.7	1.7	$30,000 and over	3.0	2.8
N	(442)	(495)	N	(522)	(542)

Table A6

Standard errors (and unweighted numbers) for Table 6: Percent of white 3- and 4-year-olds enrolled in preschool by mother's work status and age: 1975 and 1984

	1975		1984	
Mother's work status	Age 3	Age 4	Age 3	Age 4
Not working	1.7	1.7	2.3	2.4
N	(1042)	(1058)	(907)	(876)
Working full time	2.5	2.9	2.6	3.0
N	(282)	(349)	(522)	(511)
Working part time	3.8	3.3	3.3	3.4
N	(181)	(256)	(329)	(359)

Table A7

Standard errors (and unweighted numbers) for Table 7: Percent of white 3- and 4-year-olds enrolled in preschool by mother's work status and mother's marital status: 1975 and 1984

	1975		1984	
Mother's work status	Married, husband present	All others	Married, husband present	All others
Not working	1.1	3.6	1.4	4.4
N	(1944)	(156)	(1584)	(199)
Working full time	2.3	4.1	2.3	4.5
N	(513)	(118)	(862)	(171)
Working part time	—	—	—	—
N	(412)	(25)	(641)	(47)

—Not included due to small sample size.

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Trends in Elementary and Secondary Public School Enrollment

by Phillip Kaufman

Overview

Public school enrollment declined across the Nation from the record levels of the late 1960's and early 1970's as the postwar baby-boom generation moved through and out of the educational system. However, their children—the baby boomlet—are now entering the nation's schools, reversing the enrollment declines of the past 15 years. Yet, the composition of the next generation of school-children will be considerably different than that of the baby-boom generation. National demographic and sociological changes of the past 20 years will be reflected in the characteristics and home backgrounds of the nation's school-children.

This paper examines recent enrollment trends and changes in the composition of the student body in elementary and secondary public schools at both the State and national levels. Future trends and their possible implications for the Nation's schools are also discussed. The major findings are:

Enrollment trends

- At the national level, elementary enrollment, which has been declining since 1970, will begin to increase in 1986. Secondary enrollment, which started to decrease in 1976, is projected to begin rising in 1991.
- The baby boomlet will produce a much smaller bulge of students moving through the school system than resulted from the postwar baby boom. Unless there is a dramatic upturn in birth rates, there will be another decline in enrollment as this age cohort leaves the public schools.
- Past enrollment patterns have exhibited considerable variation across the States, and this is likely to continue in the future. Some States may continue to experience enrollment declines while others may have large increases.
- The greatest gains are expected in the West and Southwest. Smaller increases are likely in the Southeast, while the Northeast and Midwest are apt to have further enrollment declines.

Student composition trends

- The proportion of minority students, particularly Asian and Hispanic students, has been increasing in recent years.
- If present trends in fertility rates and immigration continue, minority students are likely to constitute an even larger share of students in the future.
- The percentage of non-English-language background children has been rising and will increase further if present patterns continue into the next decade.
- Poor children and children from single-parent families represent growing proportions of the Nation's school-children.
- States vary considerably in the extent to which these national trends are reflected within their schools. In general, the Southeastern States have the largest concentrations of poor and minority students, while the Southwestern States and California have the highest proportions of language-minority students.

Implications of enrollment trends

- The upturn in enrollment will mean that different challenges will face many administrators and policymakers in the late 1980's and the 1990's than in the 1970's and early 1980's, challenges associated with growth rather than retrenchment.
- Because of variations in enrollment trends within and between States, there will be considerable variation across States and localities in the challenges they will face. Some districts may be forced to take steps such as ambitious building programs or double sessions to accommodate growing numbers of students, while other districts will still be closing schools.
- In responding to the impact of enrollment increases, decisionmakers must take into account the fact that the increase may be short-lived, at least in those areas where it is primarily

the result of the baby boomlet, rather than migration and immigration.

Implications of student body changes

- In recent years a growing proportion of the Nation's students come from single-parent families, from families in poverty, and from language minority backgrounds. These characteristics may place children "at risk" with regard to educational achievement.

- If current trends in fertility and divorce rates, immigration, and out-of-wedlock pregnancies continue, these groups of "at-risk" children may constitute an even larger proportion of all students in the future.

- These children and the growth in their number are not evenly distributed among the States and localities. In some school districts, particularly large urban districts, such children are already in the majority.

- Serving the educational needs of these children will be a major challenge to the Nation's schools in coming years.

- Some critics of the education reform movement have suggested that many of the reforms currently being implemented may work to the disadvantage of "at-risk" students.

- Supporters of the reform movement point out that "second-generation" reforms are addressing the issue of how to serve students with special needs.

Data

This report is based primarily on annual data from the Bureau of the Census' Current Population Survey (CPS) October School Enrollment Supplement and the Common Core of Data (CCD) from the Center for Statistics, formerly the National Center for Education Statistics, of the U.S. Department of Education. The data on minority enrollment come from surveys conducted by the Department of Education's Office for Civil Rights (OCR).

Enrollment Trends

National enrollment trends

On the national level, school enrollment declined steadily through the 1970's and early 1980's as the large postwar birth cohort moved through and out of the educational system. Elementary school (K-8)[1] enrollment reached a record high in 1969, while secondary school (9-12) enrollment peaked in 1975-76 (Figure 1). By 1984 elementary enrollment was down 17 percent from the 1969 high and secondary enrollment was down 14 percent from the record high.

As of fall 1986, however, elementary school enrollment will again begin to increase nationally, as more and more offspring of the postwar generation begin to attend school.[2] The annual number of births in the United States, which had been declining since 1960, began to rise in 1976 and is projected to continue increasing through 1987 (U.S. Department of Commerce, 1984). The increased number of births has resulted in a new cohort of children that will swell the ranks of elementary school students well into the 1990's. As this cohort ages, secondary enrollment will begin to rise in 1991.[3]

Local and regional enrollment trends

Past enrollment trends have displayed considerable variation across regions and the same will be true in the future. Figure 2 shows the general pattern of combined elementary and secondary enrollment increases and decreases from 1980 to 1984.

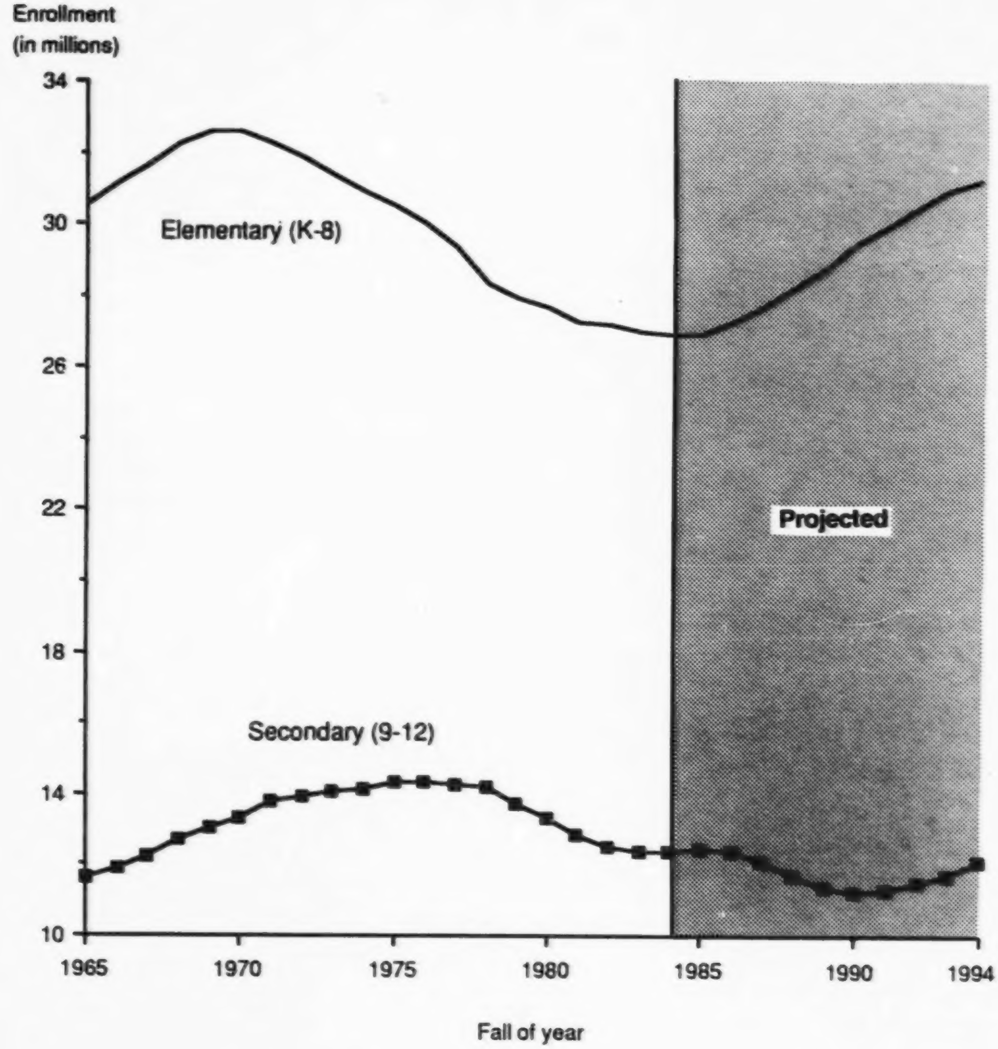
- Enrollment losses characterized the North Central and Northeastern States, the old industrial region of the country, and also characterized most of the Southeastern States.

- Enrollment increases were typical of the West and Southwest.

The coming growth in the number of students will not uniformly affect every State and school district. Some States will experience enrollment increases, while others will have further declines or stable enrollment. If the recent past holds any clues to the future, the States in the West generally will be the ones with the largest enrollment gains, and the States in the Northeast and North Central regions will continue to lose students.

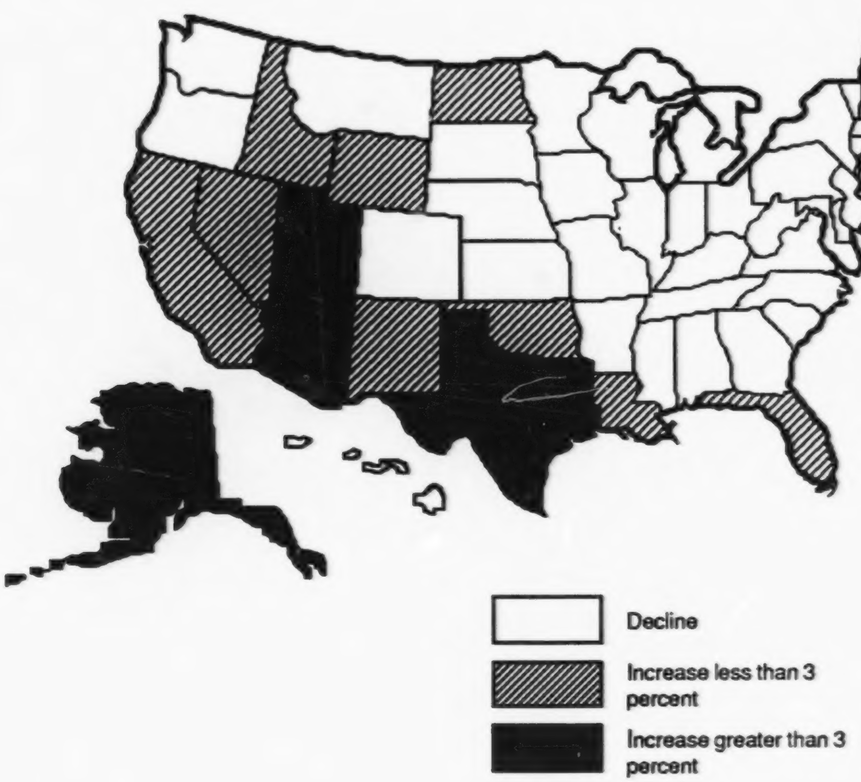
Based on 1980 Census data on key variables such as migration, fertility, and age distribution of the popu-

FIGURE 1 -- **Public school enrollment: 1965 to 1994**



SOURCE: U.S. Department of Education, Center for Statistics, unpublished tabulations.

FIGURE 2 – **Change in public school enrollment between 1980 and 1984**


Decline
Increase less than 3 percent
Increase greater than 3 percent

SOURCE: U.S. Department of Education, Center for Statistics, unpublished tabulations.

lation, State projections were developed for the number of school-age children through the year 2000 (Masnick & Pitkin, 1982).

- The Mountain and Pacific States are projected to experience growth in their school-age populations because of higher fertility rates and immigration from other regions (Figure 3).
- Although Figure 2 shows that enrollments in the West South Central and East South Central States have recently been declining, these States are projected to have increased enrollments by the year 2000.
- Large declines in school-age children are projected for the North Central and Mid-Atlantic States: 10 to 30 percent in the North Central States and 30 to 40 percent in the Mid-Atlantic States.

Projections have also been developed for the number of high school graduates for each region of the country (McConnell & Kaufman, 1983).

- By the turn of the century in the Western Region, 19 percent more students will graduate from high school than graduated in 1981.
- By the year 2000 the Northeastern Region will graduate 30 percent fewer students per year than in 1981.

If current population, migration, and enrollment patterns persist, the West will experience large increases in pupils. Many school districts in that region will be trying to find enough classrooms and books for their students. At the same time, school closures and other problems associated with diminished enrollments will continue to affect school districts in the old industrial Northeast and North Central States.

Trends in the Composition of the Student Body

Racial/ethnic mix

While nationally the student population is still overwhelmingly white, the proportion of minority students has been rising, from 24 percent to almost 27 percent between 1976 and 1980 (U.S. Department of Education, 1984).[4] However, there was considerable variation in the enrollment trends for individual minority groups (Table 1).

- Asians were the most rapidly expanding group of minority students between 1976 and 1980. The number of Asian students increased by 40 percent during that period.
- The number of Hispanic students also increased considerably (13.2 percent).
- The number of black students decreased 5 percent between 1976 and 1980. However, the total number of students declined even faster, so that the proportion of black students increased slightly over the period.

Part of the increase in enrollment for Asians and Hispanics came as a result of recent immigration. In addition, a large part of the increase in Hispanic enrollment came as a result of continued higher fertility rates for Hispanic women: 86.1 live births per 1000 women age 18 to 44 in 1984 as opposed to 64.4 per 1000 for non-Hispanic women (U.S. Department of

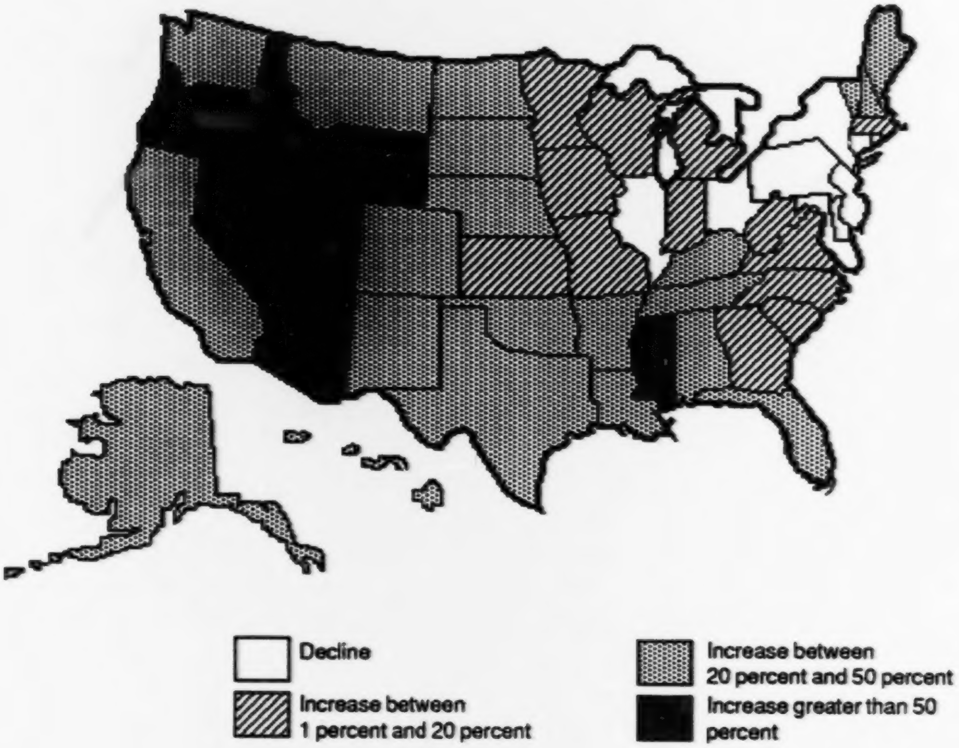
Table 1

Public elementary and secondary enrollment, by race/ethnicity: 1976 to 1980

Racial/ ethnic group	1976		1978		1980	
	Number	%	Number	%	Number	%
White	33,229,249	76.0	31,509,927	75.3	29,180,415	73.3
Total minority	10,484,562	24.0	10,318,400	24.7	10,652,212	26.7
Black	6,773,690	15.5	6,578,047	15.7	6,418,194	16.1
Hispanic	2,807,452	6.4	2,825,229	6.8	3,179,285	8.0
Asian	535,158	1.2	585,667	1.4	749,003	1.9
American Indian	368,262	0.8	329,430	0.8	305,730	0.8

SOURCE: U.S. Department of Education, Office for Civil Rights, unpublished tabulations, 1984.

FIGURE 3 -- **Projected change in school-age population between 1985 and 2000**


Decline
Increase between 1 percent and 20 percent
Increase between 20 percent and 50 percent
Increase greater than 50 percent

SOURCE: Masnick and Pitkin, *Cohort Projections of School-age Population for States and Regions: 1985 to 2000.*

Commerce, 1985a). (Comparable rates for Asian women are not available.) While family size for non-Hispanics has declined, the tradition of relatively large families among Hispanics has continued.

State patterns. As was the case with total enrollment, the impact of increased minority enrollment is likely to be felt more in some States than in others (Figure 4). In general, States with traditionally high proportions of minority students, especially Hispanic and Asian students, generally had increases in the proportion of minority enrollment between 1976 and 1980. In States with traditionally low minority enrollment, the proportion of such students was stable or declined during the same period. For example:

- In California, minority enrollment grew from 34.9 percent to 42.9 percent between 1976 and 1980.
- Minority enrollment in Texas increased from 41.8 percent to 45.9 percent over that period.
- In contrast, North Dakota's minority enrollment dropped from 6.2 percent to 3.5 percent (U.S. Department of Education, 1984).

Local patterns. Minority students and the growth in their numbers are unevenly distributed among school districts. Many urban districts in particular have undergone large increases in minority enrollment and have sizable proportions of minority children. For example:

- From 1970 to 1982 the proportion of minority enrollment in the public schools doubled in the cities of Seattle (from 20 to 48 percent), San Diego (25 to 50 percent), and Portland, Oregon (12 to 27 percent).
- Boston's proportion of minority enrollment nearly doubled during the same period (36 to 70 percent).
- Minority enrollment in Los Angeles grew from 50 percent in 1970 to 78 percent in 1982.
- Other large urban districts experienced similar increases.
- By 1982 four cities—Atlanta, the District of Columbia, Newark, and San Antonio—had minority enrollment over 90 percent (U.S. Department of Education, 1985a).

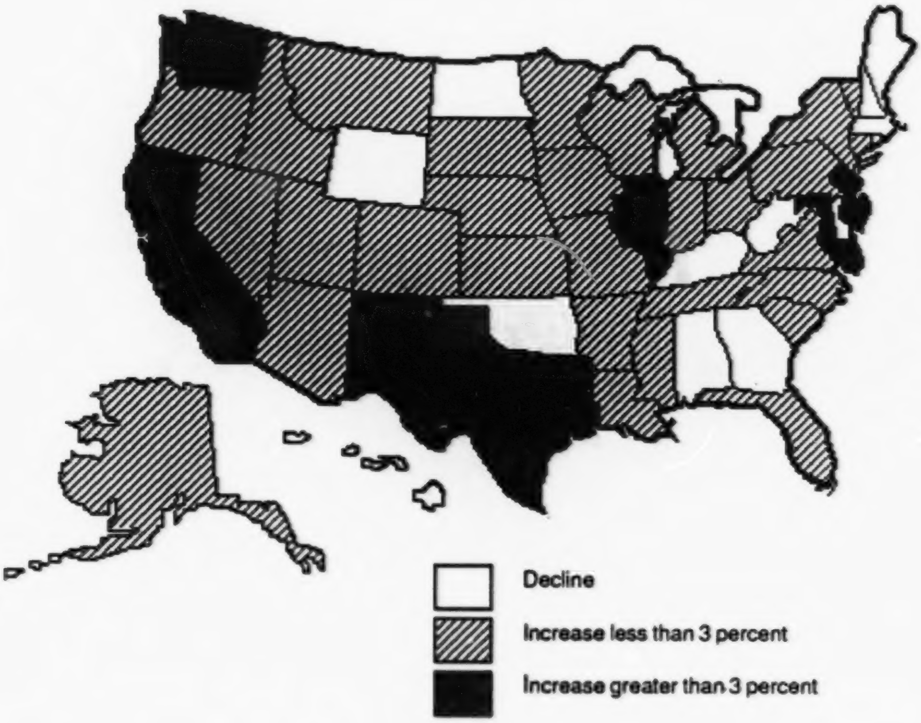
Non-English-language background

The number of Asian and Hispanic students is growing, and many of these students come from homes where English is not the primary language. Furthermore, many children from non-English-language backgrounds (NELB) have limited proficiency in English (LEP). (See the Glossary to this paper for a full definition of these terms.) Between 1976 and 1982 the number of children under 18 from households whose primary language was not English (NELB) increased 27.3 percent. During the same period the number of language-minority children with limited English proficiency (LEP)[5] grew 10.3 percent (U.S. Department of Education, 1983). Projections developed in 1981 show the total number of LEP children ages 5 to 14 increasing 16.7 percent between 1980 and 1990, and increasing 41.7 percent between 1980 and 2000 (U.S. Department of Education, 1981).[6]

State patterns. Nationally, in 1980 the proportion of children from non-English-language background was 9.6 percent, but the proportion varied considerably among the States (Figure 5).

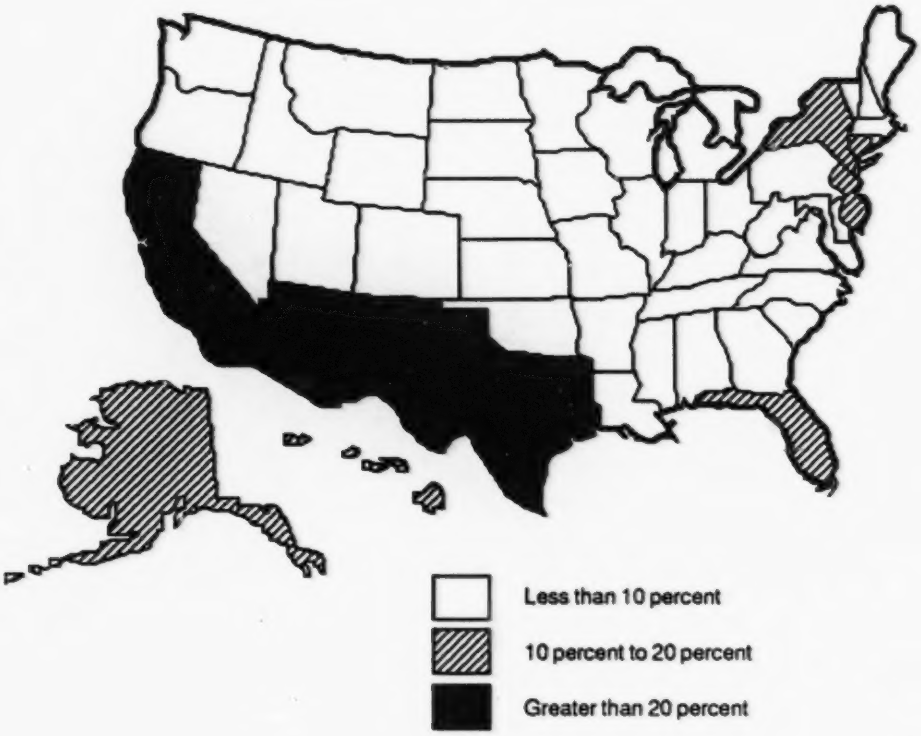
- Several Western States—New Mexico (36.5 percent in 1980), Texas (25.6 percent), California (22.9 percent), and Arizona (22.4 percent)—had the highest proportions of NELB children.
- The States in the New York metropolitan area also had high proportions of such children: New York (13.4 percent), New Jersey (17.2 percent), and Connecticut (11.0 percent).
- Most other States had relatively few such children (less than 5 percent).
- States in the Southeast (with the exception of Florida) generally had the lowest proportions of NELB children in 1980 (Sherman & Salganik, 1986).
- By 2000 the largest increases in the number of NELB children are projected in several Western States, with Texas and California projected to have the largest gains, 65.1 percent and 44.5 percent, respectively (U.S. Department of Education, 1981).

FIGURE 4 -- **Change in minority enrollment between 1976 and 1980**


Decline
Increase less than 3 percent
Increase greater than 3 percent

SOURCE: U.S. Department of Education, Office for Civil Rights, unpublished tabulations.

FIGURE 5 -- **Non-English-language background children as a percent of the 5- to 17-year-old population: 1980**


Less than 10 percent
10 percent to 20 percent
Greater than 20 percent

SOURCE: Sherman and Salganik, *State Education Service Requirements Index.*

Poverty

The poverty rate for all persons and for children under 18 in 1969 was approximately half what it had been a decade earlier. In 1959 about one in four children lived in poverty; by 1969 the rate had dropped to one in eight (Table 2). The proportion of all persons living in poverty continued to decrease through the 1970's, but the proportion of poor children increased 16 percent between 1969 and 1979. In the early 1980's the poverty rate rose dramatically, to 15.2 percent for all persons and 21.3 percent for children in 1983. The number of poor children increased by more than 3 million between 1979 and 1983. Since 1983, the number and percentage of poor children has fallen somewhat, but remain well above the 1979 levels.

While in absolute numbers most poor children are white, black and Hispanic children are more likely to live in poverty.

- Among poor children, whites outnumber blacks two to one and non-Hispanics outnumber Hispanics by six to one.
- In 1983 one of every six (17 percent) white children was poor.
- Almost two of every five (39 percent) Hispanic children and one of every two (47 percent) black children were living in poverty in 1983 (Congressional Research Service, 1985).

State patterns. National aggregate poverty figures mask the varied incidence of poverty in individual States (Table 3).

- The poverty rates for children ages 5 to 17 in Southeastern States are almost twice those for States in other regions of the country. In 1979 when the national poverty rate for children was 16.0 percent, almost a third of the children in Mississippi (30.4 percent) were living in poverty, and several other States had between a fifth and a fourth of their school-age population living in poverty—Louisiana (23.5 percent), Alabama (23.6 percent), Arkansas (23.4 percent), and Kentucky (21.6 percent) (U.S. Department of Commerce, 1983).
- The States with the lowest proportion of poor children (8 to 12 percent) tended to be located in the West and Midwest.
- Differences in poverty rates among regions decreased between 1969 and 1979. The proportion of poor children generally decreased in the Southeast and increased in other regions during the 1970's.

Family structure

During the 1950's, American families with school-age children generally had two parents living at home. Today family structure displays much more diversity. It has been estimated that 59 percent of the children born in 1983 will live with only one parent at some point before reaching the age of 18 (Norton & Glick, 1986). This estimate reflects both high divorce rates and an increase in the number of out-of-wedlock births.

There has been a steady increase in the number of female-headed families, from 9 percent of all fami-

Table 2

Proportion of persons and children living below the poverty level: 1959 to 1985

	Percent below poverty level								
	1959	1969	1979	1980	1981	1982	1983	1984	1985
All persons	22.4	12.1	11.7	13.0	14.0	15.0	15.2	14.4	14.0
Related children (in families) under 18	26.9	13.8	16.0	17.9	19.5	21.3	21.8	21.0	20.1
	Number below poverty level (In thousands)								
	1959	1969	1979	1980	1981	1982	1983	1984	1985
All persons	39,490	24,147	26,072	29,272	31,822	34,398	35,303	33,700	33,064
Related children (in families) under 18	17,206	9,501	9,993	11,114	12,068	13,139	13,427	12,929	12,483

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Money Income and Poverty Status of Families and Persons in the United States: 1985*, 1986.

Table 3

Poverty rates for children under 18, by State: 1969 and 1979

Region/State	Percent below poverty level		Region/State	Percent below poverty level	
	1969	1979		1969	1979
United States	15.1	16.0	South	23.5	19.6
			Delaware	12.3	15.6
Northeast	10.9	15.5	Maryland	11.5	12.5
Maine	14.5	15.8	District of Columbia	23.1	27.0
New Hampshire	7.9	9.4	Virginia	18.0	14.9
Vermont	11.5	13.9	West Virginia	24.3	18.5
Massachusetts	8.8	13.1	North Carolina	23.6	18.3
Rhode Island	11.7	13.6	South Carolina	28.7	21.0
Connecticut	7.8	11.4	Georgia	24.1	21.1
New York	12.7	19.0	Florida	19.2	18.5
New Jersey	9.2	14.1	Kentucky	24.9	21.6
Pennsylvania	10.9	13.9	Tennessee	24.6	20.6
			Alabama	29.3	23.6
Midwest	10.6	13.0	Mississippi	41.3	30.4
Ohio	10.0	13.2	Arkansas	31.3	23.4
Indiana	9.3	11.9	Louisiana	30.0	23.5
Illinois	11.0	14.9	Oklahoma	19.7	15.7
Michigan	9.4	13.3	Texas	21.7	18.7
Wisconsin	8.9	10.4			
Minnesota	9.5	10.2	West	12.9	14.2
Iowa	10.1	11.5	Montana	13.3	13.8
Missouri	14.9	14.6	Idaho	12.7	14.3
North Dakota	15.9	14.3	Wyoming	11.8	7.7
South Dakota	18.9	20.0	Colorado	12.7	11.5
Nebraska	12.2	12.1	New Mexico	26.7	22.1
Kansas	12.0	11.4	Arizona	17.9	16.5
			Utah	10.6	10.7
			Nevada	9.1	10.0
			Washington	9.8	11.5
			Oregon	10.8	12.0
			California	12.7	15.2
			Alaska	14.7	12.1
			Hawaii	10.3	13.0

SOURCE: U.S. Department of Commerce, Bureau of the Census, *U.S. census of the population, 1970*, Vol. 1 (PC70-1-C), 1973 and *U.S. census of the population, 1980*, Vol. 1, Chapter C (PC80-1-C), 1983.

lies with children under 18 in 1959 to nearly 23 percent in 1984 (Congressional Research Service, 1985). In 1984 60 percent of black families were headed by a single parent (94 percent of these by the mother) (U.S. Department of Commerce, 1985b).

The sharp increase in the proportion of poor children is partly a function of the rising number of female-headed households. Average earnings for full-time female workers were only $18,088 in 1985, and more than a third (34 percent) of all female-headed households were below the poverty line in 1985 (U.S. Department of Commerce, 1986a). The "feminization of poverty" has resulted in women *and children* now accounting for 77 percent of all persons in poverty, with children under 18 accounting for 39 percent of the total.

Implications

This paper has two broad themes. One is the coming round of rising public school enrollments due primarily to the baby-boomlet phenomenon. The second is the changing demographic profile of the Nation's students. These two developments have broad implications for educational policy at local, State, and national levels.

Implications of enrollment increases

As the "echo" of the postwar baby-boom generation passes through the schools, many school districts will have to cope with the problems associated with rising enrollment. The experiences of States and school districts already dealing with rising enrollment may provide an indication of what those areas with future enrollment increases may face.

- In Utah, where total enrollment increased 7 percent from 1980 to 1984, Governor Bangerter is advocating year-round schooling, double sessions, and other measures to manage the "tidal wave" of students moving into the public schools (Lindsey, 1986).
- In California, the school board of the Los Angeles City School District, in an attempt to accommodate an annual increase of 14,000 students, has recently eliminated the traditional summer vacation and has gone to a year-round schedule in some schools ("Schools in Los Angeles," 1986).

One dimension of enrollment increases will be an increased demand for teachers. As enrollment begins to rise and the present teaching force ages, the number of new teachers who must be hired each year will increase from 115,000 new teachers in 1981 to 215,000 new teachers in 1992. Between 1986 and 1992, 1.3 million new teachers will be hired nationwide (Carnegie Forum on Education and the Economy, 1986).

As the baby-boom generation moves out of the childbearing years, the annual number of births is expected to recede again. Another downturn in public school enrollment will follow.

- The expected increases in pupils in the 1980's and 1990's will be proportionately and numerically much smaller than those associated with the original baby boom.
- The responses of States and school districts to increased enrollment will need to take into account the fact that in many places the increases will be relatively modest and transitory.
- In some States and school districts net migration will make a major contribution to enrollment increases. Enrollment may continue to expand in these places.

Exact predictions of when and where the impact of the coming enrollment increases will be felt are problematic. Such predictions are dependent on local conditions. Nevertheless, many States and localities will feel pressures from increasing enrollment in the near future and some may have to institute in their jurisdictions measures similar to those taken recently in Los Angeles and Utah.

However, the surge in school enrollment will pass over some States and school districts altogether. If recent trends continue, while the Mountain and Sunbelt States experience enlarged school registrations, districts in the North Central and Northeastern States may still be managing retrenchment as their enrollments continue to decline.

In addition, enrollment trends may vary even within districts. Areas within a district may experience large enrollment increases while other areas in the same district are experiencing enrollment declines. This may be particularly true in large suburban school districts adjacent to large cities. In these districts, schools may be closed in older areas close to the city while schools are being built at the same time in areas away from the city's core.

Implications of demographic changes

Unlike the enrollment increases, changes in the demographic makeup of the student body appear to be a longer term phenomenon. Unless there are major changes in the underlying social and demographic trends,

- A large proportion of the children enrolled in the public schools will have one or more of the following characteristics: poverty, non-English-language background, and single-parent families, which may place them "at risk" in terms of success in the educational system, and
- The increase in the "at-risk" population will not be short-lived but is expected to continue into the 21st century (Hodgkinson, 1985; "A population in motion," 1986).

Children in poverty. One aspect of the changing demographic composition of the Nation's student body is the substantial increase in the number and proportion of children living in poverty. Researchers from many disciplines have reached the common conclusion that poverty has deleterious effects on the home environment, which in turn has a major impact on educational achievement (Coleman et al., 1966; Jencks et al., 1972). Ravitch (1983) has summarized some of the early research on the educational effects of poverty:

> Compared to the middle-class home, the poor home (has) few books, toys, games, or objects to stimulate the child's visual and auditory senses. Compared to middle-class parents, who (have) leisure time and education, poor parents (have) less time to read to, talk to, and interact with their children in ways that (promote) their acquisition of language skills and (encourage) their curiosity (p. 151).

Research has indicated that poor children start school less ready to learn than their peers and fall farther behind as they progress through school (Congressional Research Service, 1985).

The increase in the number and proportion of poor children means:

- More children enrolling in school from the kinds of home environments associated with low educational achievement, and

- An increased need for policies and practices appropriate to poor and disadvantaged children, particularly in districts with large increases in such children.

Non-English-language background students. The increase in the proportion of Hispanic and Asian students will result in a student body more culturally and linguistically heterogeneous than has existed in recent decades. Such heterogeneity provides an opportunity for enriching the educational experience of all students.

However, increased cultural and linguistic diversity will also pose challenges to the Nation's schools.

- Districts with large numbers of limited-English-proficient students may be hard pressed to ensure that all of them become fluent in English.
- The problem will be most severe for those districts and schools with high proportions of language-minority enrollments *and* a highly heterogeneous language-minority enrollment. For example, in one elementary school in Oakland, California, 14 different languages are spoken in the course of a normal school day ("The war of the words," 1985).

Family structure. As the American family and social structure have changed, the schools have been asked to assume more responsibility not only for the education of students, but also for their general health and welfare. These added responsibilities, what some have called the "service curriculum" (Powell, Farrar, & Cohen, 1985), reflect the schools' attempt to address unmet developmental needs seen as prerequisites to educational attainment.

- With many American families fragmented and unable (or unwilling) to supply many of these developmental needs, more students may require the offerings contained in the "service curriculum" than ever before.

In addition, with the increase in the number of women in the workforce and the number of single parents, the availability of after-school and before-school child care services has become an important issue for a growing proportion of parents. Families with working mothers may turn to the private sector to supply child care services, increasing the squeeze on already tight family budgets. Alternatively, demand may escalate for the public schools to provide custodial care, with or without an educational component, thereby increasing the burden on local school districts. Many districts now offer these before- and after-school child care services. Furthermore, the National Conference of State Legislatures cited child care services (along with early-childhood education) as the "most significant new areas of legislative activity in education in 1985" ("Early-childhood education," 1985).

These developments also have implications for school attendance patterns. Some districts have taken the position that they can better serve the needs of many families by allowing greater within-district flexibility for parents in the choice of a public school for their child.

- The availability of school-based child care services may affect the choice of a school.

- There is increasing interest in "workplace schools," where the child is enrolled in a school near the parent's workplace rather than in the neighborhood school (Hoachlander & Choy, 1984). Prince George's County, Maryland has such workplace schools as a part of its overall desegregation plan ("P.G. considering," 1985).

A population at risk?

There has been a substantial increase in recent years in the number and proportion of the Nation's schoolchildren coming to school from backgrounds that increase the probability that they will not do well in school. The increase in the number of children "at risk" is especially salient for the current educational reform movement, which some have claimed will exacerbate the problems of such students (Howe, 1985). This reform movement, triggered in part by several national commission reports, is intended to promote "excellence" and increase the achievement of the Nation's students in part by raising standards and requirements.

- Critics have argued that the reforms do not pay adequate attention to the educational needs of "at-risk" students, but instead are aimed at the average or above-average pupil.
- Furthermore, some observers have suggested that the recommendations for more homework, more demanding courses, longer school hours, and more tests, as currently implemented by States and school districts, are likely to have a negative effect on many "at-risk" students. If such students are unable to meet these stiffer requirements, they may experience an even greater sense of failure and dissatisfaction with school, become discouraged, and drop out (Natriello, McDill, & Pallas, 1985).

Supporters of the reform movement reply that raising standards and requirements will benefit everyone, particularly the "at-risk" population, which is least well served by the current system. While agreeing that the original focus of the reform movement was primarily the achievement of the average and above-average child, advocates of reform maintain that the movement is now facing the "second-generation" problems of how to serve students with special needs (Cordes, 1985), or "how to harness [the reform movement's] dominant homogenizing impulses to the reality that people are not all alike" (Finn, 1985).

Summary

In the next decade, as in the past, an aggregate national picture of public elementary and secondary education will be insufficient to guide policymakers. Trends within individual States and locations will determine the decisions of State and local policymakers. States that experience large enrollment increases will be beset by one set of problems, while States with enrollment declines will face another set. Meeting and conquering these problems will be the challenge of the next decade for many school districts.

Many States will be confronted with another challenge as well: a student body composed of growing proportions of at-risk children— those from poor families, from language-minority backgrounds, and from single-parent families. Unlike the transient problems associated with temporarily increased enrollments, the problems connected with these long-term demographic changes may be a more durable feature of education in the United States for the next few decades.

Footnotes

[1] The Department of Education's Center for Statistics (CS) collects data from schools that offer at least a first grade class. Therefore CS estimates of school enrollment include most kindergarten and some nursery school enrollment and exclude preprimary enrollment in schools that do not offer first grade.

[2] Total elementary and secondary enrollment increased in 1985, due to an increase in secondary enrollment. However, secondary enrollment is projected to decline again for 1986 through 1990.

[3] The projections used here are based upon data from the Department of Education's Center for Statistics and demographic data from the Bureau of the Census. Projections of enrollments in elementary and secondary schools are based on a grade-retention or cohort-survival method. This is one of the most commonly used projection methods and is based on the entrance of 6-year-olds into first grade and their subsequent progress through elementary and secondary schools as determined by grade-retention rates. For more details on the precise methodology used in these projections, see *Projections of Education Statistics to 1992-93* (U.S. Department of Education, 1985b).

[4] Counts of Hispanic students are determined in different ways in the two basic data sources used in this paper. The Census Bureau considers Hispanic background an ethnic, not a racial category. Individuals are classified on both ethnicity—Hispanic or non-Hispanic, and race—white, black, Asian, American Indian or other. Because Hispanics are included in the racial categories, comparisons cannot be drawn between whites, blacks, and Hispanics using published Bureau of the Census data since the first two groups both include Hispanics. The Office for Civil Rights (OCR) student data are collected on the basis of mutually exclusive categories, so that it is possible to compare Hispanics with white non-Hispanics and black non-Hispanics using those data.

Unfortunately, OCR collects such data on an irregular basis, while annual student counts are available from Census' October Supplement to the Current Population Survey (CPS). Data from the 1984 OCR survey were not yet available at the time this paper was written. Therefore more recent data on enrollment by race/ethnicity are available from CPS than are reported here. In 1981 CPS data showed that 16.4 percent of school enrollment was comprised of black children and 8.7 percent of school enrollment was comprised of children of Spanish origin. In 1985, black and Spanish origin children comprised 17.0 and 10.1 percent of school enrollment respectively (U.S. Department of Commerce, 1986b). However, because of the problems outlined above and the fact that State data are not available from CPS, only OCR data are used in the body of this paper.

[5] Limited-English-proficient estimates include all children from language-minority backgrounds scoring below specified cutoffs on special tests of English proficiency.

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[6] Estimates of the number of children who require special language services are calculated in a variety of ways. The divergence in estimates is partially due to differences in the definitions used, and partially due to different measures of critical variables (such as "sufficient limitation in English" and "dependence on a non-English language"). See Barnes & Milne (1981) for a full discussion of these estimates. Furthermore, the accuracy of specific predictions of the future number of language-minority children is problematic for a variety of reasons. The recent volatile influxes of Indochinese and Cuban refugees indicate the difficulty in making accurate long-term projections. These data are presented here as an indication of general trends that can be used with some confidence, not as precise predictions. The estimates are also based on relatively old data (the 1976 Survey of Income and Education, conducted by the Bureau of the Census).

Appendix

Technical Note

Precise projections of the future composition of the school-age population are generally not available. Few attempts have been made because there are too many unknowns to be able to make accurate predictions of the number of poor, minority, or limited-English proficient children in the year 2000. Included in the unknowns are reliable estimates of current parameters, particularly for language-minority children, as well as estimates of future parameters, such as birth and immigration rates. When projections for population groups are made, one must use them with caution (as has been done in this paper).

However it is possible to look at general trends over time, such as the last 20 years, and make limited inferences about the composition of the future school-age population. For example, based on the increase in the number of children living in poverty from 1960 to 1985, and on trends in birth rates, it is reasonable to assume that the next generation is likely to have high proportions of poor children. This is the approach followed in this paper; with caveats such as "if current demographic trends continue," etc., limited inferences have been made about the nature of the coming school-age population.

Glossary

Non-English-language background (NELB). Persons of any age whose usual or second individual language, usual or second household language, or mother tongue is other than English, whether or not they usually speak English.

Limited-English proficient (LEP). Persons of non-English-language background (as defined above) who are also limited in English proficiency. Limited English proficiency has been determined by a language test, the Language Measurement and Assessment Inventories, and statistically linked to a larger non-tested population by a set of census-type questions.

Reliability of Estimates

All comparisons cited in the text are statistically significant at the 0.05 level of significance. This means that the difference between two sample estimates is greater than 1.96 times the standard error of the difference.

Table A1

Standard errors for Table 2: Proportion of persons and children living below the poverty level: 1959 to 1985

	Percent below poverty level								
	1959	1969	1979	1980	1981	1982	1983	1984	1985
All persons	0.35	0.21	0.20	0.22	0.23	0.23	0.23	0.23	0.22
Related children (in families) under 18	0.62	0.38	0.42	0.48	0.49	0.51	0.52	0.51	0.50
	Number below poverty level (in thousands)								
	1959	1969	1979	1980	1981	1982	1983	1984	1985
All persons	475	420	433	485	504	519	524	515	511
Related children (in families) under 18	353	275	282	317	330	343	346	340	335

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Money Income and Poverty Status of Families and Persons in the United States: 1985*, 1986.

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School Dropouts in the United States

by Aaron M. Pallas

Overview

Substantial numbers of students drop out before graduating from high school. Many never return to the educational system. Dropouts are of concern to families, educators, and policymakers for a variety of reasons. They may suffer economic and social disadvantages throughout their lives. For the Nation as a whole, the costs of the dropout problem are reflected in higher welfare expenditures, lost tax revenues, and increased crime and crime prevention costs (Catterall, 1985). The intangible costs to individuals and society are also substantial.

This paper presents a variety of information regarding school dropouts. It examines national data and trends related to dropouts, and the reasons for dropping out. In addition, it considers the consequences of dropping out, with particular attention to the frequency and results of later returns to the education system. The major findings are:

Dropout Rates

- Calculating dropout rates is difficult because of definitional and data problems.
- National data over time on the incidence of dropping out do not exist. The available annual national data instead measure related phenomena—high school graduation or completion rates.
- Nationally, slightly less than three-quarters of all 18- and 19-year-olds have completed high school.
- High school completion rates vary considerably across school districts and population groups. They are much lower than the national average in urban areas and for black and Hispanic youth.

Reasons for Dropping Out

- Poor academic performance is the best predictor of who drops out of school.
- Students who are rebellious, delinquent, or chronically truant drop out of school at higher rates than those who are not.
- Substantial numbers of young women cite pregnancy or marriage as reasons for dropping out.

The Consequences of Dropping Out

- Dropouts have more difficulty in finding and holding jobs. The estimated unemployment rate for dropouts shortly after they leave school is more than twice that of high school graduates of the same age.
- Those who do not finish high school earn less money annually than high school graduates. In 1985, among year-round, full-time workers 25 years old and older, the typical high school graduate earned over $4,000 per year more than a comparable worker with 9 to 11 years of schooling.
- The estimated lifetime earnings of high school graduates who do not attend college are approximately $200,000 higher than the earnings of those who do not complete high school.

Returning to the Educational System

- An estimated 40 percent of the students who drop out of high school subsequently return to the educational system.
- An estimated 30 percent of the students who drop out of school eventually receive a high school diploma or an alternative credential.
- National data show that the proportion of individuals who have not completed high school declines considerably with age. The noncompletion rate for 31- to 34-year-olds is approximately half that of 18- and 19-year-olds.
- The decrease in the noncompletion rate with age is due to the graduation of some who were still in school at age 18-19 as well as the return to school and completion by others who were out of school as 18- and 19-year-olds.
- Those who are more likely to return and complete include whites, those with higher test scores prior to dropping out, and those from families with a higher socioeconomic status.
- Alternatives to regular day school programs have become more prevalent in the past 20

years, and many people are using these routes to acquire high school credentials.

- Little is known about the social, economic, and educational consequences of obtaining high school graduation credentials outside of regular day school programs.

Implications

- A key to effective dropout prevention programs may be the early identification of potential dropouts, so that services can be provided to at-risk students prior to high school.
- Given the substantial proportion of dropouts who later return to the educational system, another approach to the dropout problem is greater efforts to bring young people back into the educational system after they have dropped out.
- Also helpful may be more flexible high school programs, such as those for expectant mothers and parents of young children, that allow youth to stay in school while meeting family or job responsibilities.
- It is important to know who receives alternative high school credentials, and what the consequences of obtaining these various credentials might be.

Data

Three sources of national data are used in this review: the Bureau of the Census' Current Population Survey (CPS), the Center for Statistics' (CS) Common Core of Data (CCD), and CS' High School and Beyond (HS&B) study. These are described in detail in the appendix to this paper.

Dropout Rates

Difficulties in Measuring Dropouts

How severe is the dropout problem? While the question is simple, the answer is not, because there is no standard definition of who is a dropout or how to calculate a dropout rate.

- Most education agencies (schools, school districts, and States) have their own unique ways of calculating dropout rates. There are no consistent definitions of who is considered a dropout, or what the appropriate baseline population is on which to calculate a dropout rate.
- Because definitions of the dropout rate vary so much from one locale to the next, it is difficult to compare dropout rates across schools, districts, and States.

Even the two major Federal producers of education data, the Bureau of the Census and the Center for Statistics in the U.S. Department of Education, collect data related to dropouts in quite different ways.

Many of the discrepancies in reported "dropout rates" stem from the fact that the data being collected do not directly pertain to dropouts, but to other related concepts.

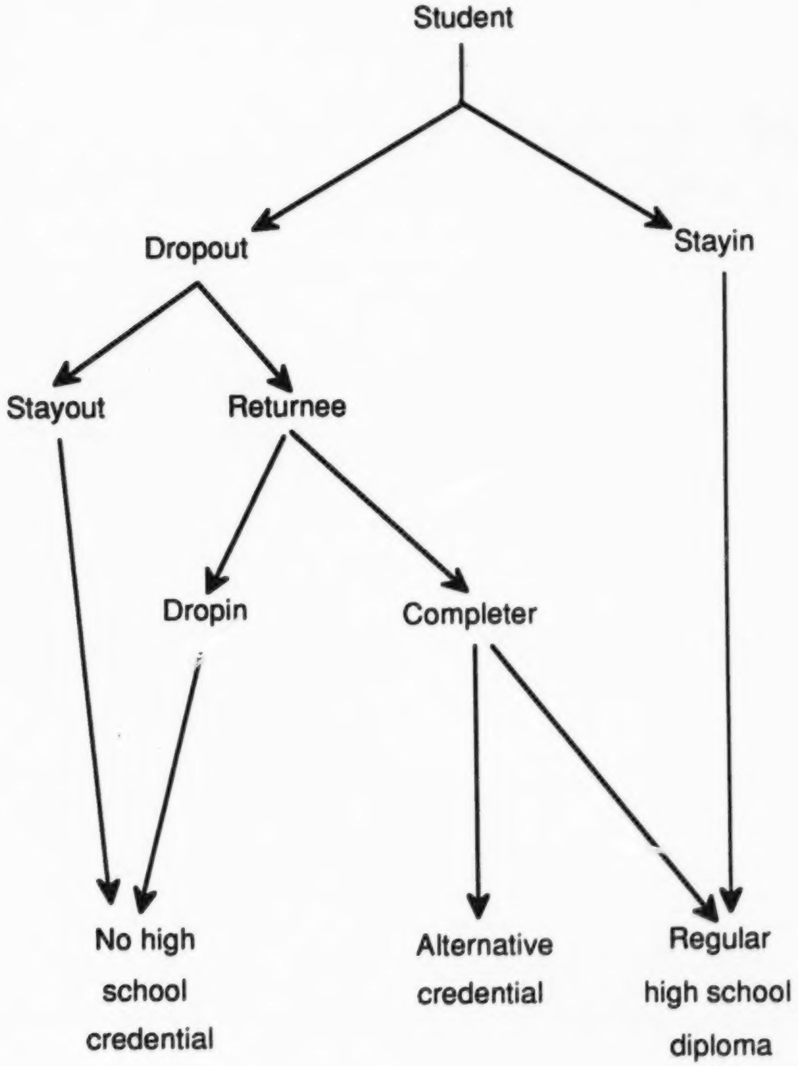
- National data on dropouts over time are not available. Data typically reported concern high school graduation or completion rates, which are not the same as a dropout rate.

The differences between a dropout rate and a graduation rate are illustrated by Figure 1, which traces alternative educational paths a student may pursue. Conceptually, a school dropout can be thought of as someone whose progress toward a high school diploma has been interrupted by a period of nonenrollment in school. All students, then, can be characterized as either dropouts or "stayins," with stayins having continuous school enrollment through high school graduation. However, some dropouts eventually do graduate from high school or obtain an alternative credential.

Dropouts can be classified as either "stayouts" or "returnees." Stayouts are those dropouts who have never returned to the educational system, while returnees are dropouts who have returned to the educational system at least once. The "educational system" here refers not only to the same school as was previously attended, but also to other schools and settings, including alternative and nonregular day education programs, and to other credentialing procedures such as the General Educational Development examination (GED) or specific State equivalency tests.

There are two types of returnees: "dropins," who have come and gone again (perhaps repeatedly) without receiving a diploma (or other credential), and

FIGURE 1 -- **Alternative educational paths through high school**


Student
Dropout
Stayin
Stayout
Returnee
Dropin
Completer
No high school credential
Alternative credential
Regular high school diploma

"returnee-completers," who have returned and have eventually earned a diploma or its equivalent.[1] Included in the latter group are those students whose return to the system consists only of taking and passing an equivalency examination.

The Bureau of the Census publishes estimates of the proportion of different age groups who have completed high school (public and private) based on responses to a household survey. The Center for Statistics reports a graduation rate, derived from its Common Core of Data (CCD) collection, which represents the number of public high school graduates nationally in a given year as a fraction of the number of 9th grade students in public schools 3 school years earlier.

- Graduation rates are calculated from both Bureau of the Census and Center for Statistics data, based on the number of high school graduates in a given cohort (an age cohort in the case of the Bureau of the Census and a grade cohort in the case of the Center for Statistics) at a specific point in time.

In either case returnee-completers who have gained their credentials through several different paths are included along with stayins in the count of graduates. However, stayins making slower than normal progress are implicitly considered dropouts, since they are not yet graduates.[2]

The Center for Statistics does have national data on dropouts from the High School and Beyond study, but those data are only for a single cohort of students, high school sophomores in 1980. Furthermore, because the students were surveyed during their sophomore year, the dropout rate is underestimated since it does not take into account those who had left school prior to that time.

Dropout and Completion Data

Although the Bureau of the Census' and Center for Statistics' methods for calculating high school graduation rates are very different, they produce rates for a similar age group that are quite similar. For those at the age when students are expected to graduate, both methods reveal that:

- Nationally for the past decade, slightly less than three-quarters have completed high school, and
- High school completion rates improved somewhat after 1982 (Table 1).

Completion rates have increased substantially in the period since World War II. The completion rate for 18- to 19-year-olds was 43 percent in 1947 (U.S. Department of Commerce, 1948).

Dropout rates vary considerably across schools and population groups (Table 2).

- Students in urban areas are more likely to drop out than those in rural and suburban areas.
- Students in public schools drop out more than those in Catholic schools.
- Blacks and Hispanics are more likely to drop out than whites.
- Men are more likely to leave school before graduation than women.
- Students from lower socioeconomic backgrounds are more likely to drop out (U.S. Department of Education, 1983).

Reasons for Dropping Out

Knowledge about why young people drop out of school can help schools, school districts and States in developing effective policies and practices for encouraging them to stay in or return to school.

- Students drop out of school for a variety of reasons, which are related to both in-school and out-of-school experiences.

There is no one reason why students drop out of school. But the reasons for, and factors associated with, dropping out can be grouped into a few basic categories: academic performance, social adjustment, and early transition into adulthood (Pallas, 1984). The most current data on reasons for dropping out are from the High School and Beyond study.

Academic Performance

Students' marks in school and, to a lesser extent, performance on standardized tests are salient indicators of academic success or failure. Students who ex-

Table 1

High school completion rates using Bureau of the Census and Center for Statistics data: 1974 to 1985

Year	Percent completing high school	
	Bureau of the Census[1]	Center for Statistics[2]
1974	73.4	75.7
1975	73.7	74.7
1976	73.1	75.1
1977	72.9	74.7
1978	73.5	73.7
1979	72.8	72.6
1980	73.7	71.9
1981	72.5	72.1
1982	72.0	72.8
1983	72.7	73.9
1984	73.3	74.1
1985	74.6	—

—Not available.

[1] Proportion of 18- and 19-year-olds who have completed high school.

[2] Public high school graduates as a proportion of public school 9th graders three school years earlier.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, *School Enrollment—Social and Economic Characteristics of Students: October* (various years) and Current Population Survey, October 1985, special tabulations. U.S. Department of Education, National Center for Education Statistics, *The Condition of Education* (various years) and *Digest of Education Statistics* (various years).

Table 2

Dropout rates for 1980 high school sophomores by sex and selected background characteristics

Background characteristic	Percent dropout rate		
	Total	Male	Female
All students	13.6	14.7	12.6
Race/ethnicity			
American Indian and Alaskan natives	29.2	27.2	31.8
Hispanic	18.0	18.1	18.0
Black	17.0	20.3	14.1
White	12.2	13.0	11.5
Asian American	3.1	3.5	2.7
Socioeconomic status			
High	5.2	7.0	3.2
Middle	9.0	9.6	8.3
Low	17.4	17.8	17.1
Unknown	31.6	32.3	30.9
Community type			
Urban	18.9	20.8	17.0
Suburban	11.8	12.5	11.0
Rural	12.8	13.6	12.0
Geographic region			
Northeast	11.3	13.4	9.0
North Central	12.0	12.2	11.7
South	15.2	16.4	14.0
West	16.6	17.0	16.3
School type			
Public	14.5	15.5	13.6
Catholic	2.3	3.2	1.6
Other private	—	—	—
High school program			
Academic	4.0	4.5	3.6
General	12.9	12.7	13.0
Vocational/technical	15.1	16.9	13.2

—Estimates not presented because of small sample size and high nonresponse in the base-year sample.

SOURCE: U.S. Department of Education, National Center for Education Statistics (1983), *High School Dropouts: Descriptive Information from High School and Beyond,* NCES 83–221b.

perience failure in school are more likely to drop out of the system.

- Poor academic performance is the best predictor of who drops out of school.
- Students with a "D" average are 5 times more likely to drop out than students with a "B" average (U.S. Department of Education, 1983).

Social Adjustment

Students experiencing difficulty negotiating the personal and social adjustments of adolescence are more likely to drop out of school.

- Students who are rebellious, delinquent or chronically truant drop out of school at higher rates than those who are not.

Truancy and getting in trouble in school frequently foreshadow dropping out of school. Among high school sophomores, chronic truants are 40 percent more likely to drop out of high school than regularly attending students, everything else being equal, and delinquent youth are 25 percent more likely to drop out than are comparable nondelinquent youngsters (Pallas, 1984).

Early Transition into Adulthood

Adolescents who assume adult responsibilities at an early age may find it difficult to cope with both school and adulthood. Teenagers assuming adult family and work roles are more likely to drop out of school than youngsters who postpone those roles.

Adult family roles. Substantial numbers of young women claim pregnancy or marriage as reasons for dropping out of school.

- Among young women, only poor academic performance rivals the importance of adult family roles as a reason for dropping out of high school (U.S. Department of Education, 1983).

Among female dropouts from the sophomore class of 1980, 31 percent claimed they dropped out because they married or planned to marry, while 23 percent gave pregnancy as a reason for dropping out (students could give more than one reason).

Adult work roles. Many dropouts report that they left high school to go to work (U.S. Department of Education, 1983; Rumberger, 1983). Dropouts report leaving both because they had to support a family, and because they were offered jobs and chose to work (U.S. Department of Education, 1983).

- Working at a regular job while in high school increases by more than one-third the chances that a youth will drop out compared to youngsters who are not as involved in work (Pallas, 1984).
- High school students who work over 20 hours per week are more likely to drop out than those who do not work at all (D'Amico, 1984).

Working more than 20 hours per week may contribute to an increased likelihood of dropping out because of the drain on time and energy available for schoolwork. Alternatively, working may teach youngsters the importance of persistence and dependability, traits critical for successful schooling as well. This may account for the fact that those who work less than 20 hours per week are less likely to leave school than those who work more hours or do not work at all (D'Amico, 1984).

The Consequences of Dropping Out

Dropping out of school worsens the life chances of school leavers. Education is generally regarded as a means for social mobility, and youth who fail to complete high school tend to damage their chances of future success. Nongraduates do worse than high school graduates in the labor market and in overall economic well-being.

However, it is unclear how much of the differential between dropouts and stayins is attributable to dropping out as opposed to other factors, since dropouts have other disadvantages as well. They tend to come from disadvantaged families. They are disproportionately minority youngsters, and frequently have socially and economically deprived backgrounds (Pallas, 1984; Rumberger, 1983; Table 2). Furthermore, as was noted earlier, dropouts often have a history of academic failure.

Labor Market

School dropouts are less likely to participate in the labor force than high school graduates. Fourteen percent of male dropouts and about one-half of female dropouts age 16 to 24 were not participants in the labor force, that is, were neither employed nor looking for work, in 1985. Among high school graduates not enrolled in college, much lower proportions—6 percent of males and 20 percent of females—were not in the labor force in 1985 (U.S. General Accounting Office, 1986).

Among labor force participants, noncompleters also have higher rates of unemployment than high school graduates.

- In 1985 the unemployment rate for men and women age 16 to 24 who had not graduated from high school was more than double the rate for high school graduates (U.S. General Accounting Office, 1986).

- Those with fewer than 12 years of schooling comprise a large part of the long-term unemployed (Feldstein & Ellwood, 1982).

Income

Among those who work full time, people who do not graduate from high school earn less money than high school graduates. The median annual income of year-round full-time workers is reported annually by the Bureau of the Census.

- Among full-time, year-round workers 25 years or older in 1985, earnings of high school graduates with no college experience were higher than earnings of those with 9 to 11 years of school–26 percent for men and 31 percent for women (U.S. Department of Commerce, 1986).

- This earnings gap between persons with exactly 12 years of schooling and those with 9 to 11 years had increased between 1970 and 1985. In 1970 it was approximately 12 percent for men and 20 percent for women (U.S. Department of Education, 1986).

These figures actually underestimate the income differential between high school graduates and noncompleters, in that some individuals do not even complete 9 years of schooling. The annual earnings of year-round, full-time workers who have completed fewer than 9 years of schooling are substantially lower than the earnings of those who have completed some high school. The gap between the earnings of high school graduates obtaining no further schooling and the earnings of those completing less than 9 years of schooling is even greater than the discrepancies noted above—approximately one-third for those with 8 years of school and about 60 percent for those with under 8 years in 1985 (U.S. Department of Commerce, 1986).

The Bureau of the Census has reported estimates of lifetime (age 18 to 65) earnings by years of school completed, as of 1979 (U.S. Department of Commerce, 1983).

- The estimated lifetime earnings of high school graduates are approximately $200,000 higher than the earnings of those who do not complete high school.

It is estimated that a male who completes fewer than 12 years of school (stayouts and dropins) can expect to earn $601,000 between the ages of 18 and 65, while a male who completes exactly 12 years of school can expect to earn $861,000.[3] The difference in the expected lifetime earnings of male noncompleters and high school graduates who obtain no further education is thus $260,000. The differential is not as large for women: $170,000 ($381,000–$211,000).

In another sense, these income comparisons underestimate the cost of not finishing high school. High school graduates who attend college earn even more, both annually and over their working careers, than do high school graduates who obtain no further schooling. Comparisons between noncompleters and high school graduates not pursuing college do not reflect the sizable economic returns that many high school graduates derive from continuing their education in college.

Not all of the differences between the earnings of noncompleters and terminal high school graduates can be attributed solely to the presence or absence of a diploma. Noncompleters and graduates differ in many ways, with graduates showing more persistence, dependability and ability than stayouts and dropins.

- These and other factors that distinguish graduates from noncompleters are highly valued by employers, and account partly for the differences in earnings between the two groups.

- McDill, Natriello, and Pallas (1986) conclude that about one-half of the difference in lifetime earnings between noncompleters and graduates is due to differences between them in ability and other factors, and about one-half is due to dropping out.

Regardless of what adjustments are proposed, estimates of the economic consequences of not completing high school are substantial.

Nonmonetary Consequences

There are nonmonetary consequences of dropping out as well. While still in school, dropouts score considerably lower than stayins on standardized tests of cognitive performance (Pallas, 1984). There now is evidence that dropping out is associated with a further widening of the gap in achievement between dropouts and stayins.

- Students who drop out show less cognitive growth than students who persist to graduation.

A battery of cognitive tests was administered to High School and Beyond sophomores in the spring of 1980, and again 2 years later, when some had dropped out and the stayins were about to graduate from high school. Alexander, Natriello, and Pallas (1985) showed that, all else being equal, the students who had stayed in school improved their test performance during the 2-year period more than students who had dropped out. These tests were not closely linked to a specific high school curriculum, but tapped more general knowledge.

Other nonmonetary consequences of dropping out include poorer health, decreased political participation, and lessened social mobility. However, there are no recent and reliable estimates of these social costs of dropping out (Lyke, 1986).

Returning to the Educational System

Most dropouts, even when surveyed shortly after dropping out, believe that leaving school short of graduation was a poor decision (Peng, 1985). Many return to school at some point.

- An estimated 40 percent of high school dropouts return to the educational system (i.e., become returnees).

A recent study estimated that, of the approximately 100,000 dropouts from the California high school class of 1983, almost 40 percent either received a diploma equivalent or entered trade school or community college immediately after leaving high school (California Legislature Assembly Office of Research, 1985). California is somewhat unusual in allowing 18-year-olds without a high school diploma or the equivalent to enroll in community colleges, so the national proportion could be somewhat lower. On the other hand, the 40 percent in California refers only to returns immediately after leaving high school, rather than eventual return to the educational system.

Many of those returning to school ultimately complete high school or receive an alternative credential (returnee-completer).

- An estimated 30 percent of the students who drop out eventually receive a high school diploma or alternative credential (Kolstad & Owings, 1986).

- Students who drop out later in their high school careers are more likely to return to and complete high school than are early dropouts (Kolstad & Owings, 1986).

Based on data from the High School and Beyond study, generally the same groups of students who are most prone to drop out are the ones least likely to return and complete high school or receive an alternative credential within two years of the time most of them would have graduated from high school.

- Fewer black and Hispanic dropouts return and finish than white dropouts.

- Dropouts from low socioeconomic backgrounds are less likely to complete high school than those from more advantaged backgrounds.

- Low test scores make it less likely a dropout will later complete a high school education.

- Dropouts living in rural and urban areas do not complete high school as frequently as those from suburban areas.

While males drop out more than females, once they have dropped out they are more likely to return and complete than females (Kolstad & Owings, 1986).

Older returnees typically do not reenter regular day high school programs. Alternative programs have become more prevalent in the past 20 years. Many States and school districts have developed adult basic education programs to serve the needs of adults seeking secondary schooling. These programs lead to a variety of certification schemes, including passing an equivalency examination.

The most frequent way to obtain an equivalency credential is through the General Educational Development (GED) examination.

- The number of persons taking the GED examination increased more than tenfold from 1961 to 1985 (Figure 2).[4]
- The number of credentials issued has followed a similar course, peaking in the early 1980's at just over 500,000 per year.
- Over 440,000 persons met State requirements for passing the GED examination in 1985 (GED Testing Service, 1986).

The GED and other credentialing systems designed for adults help to explain age patterns in graduation and completion rates.

- National data show that the proportion of individuals who have completed high school increases considerably after age 18 (Table 3).
- The magnitude of the noncompletion problem differs substantially depending on whether one considers 18-year-olds or 30-year-olds. In 1985, the proportion of 31- to 34-year-olds who had not completed high school was 12.6 percent, as compared to 25.5 percent for 18- and 19-year-olds.

The increase in completion rates with age reflects several phenomena: students still in school at age 18-19 completing high school, plus dropouts returning to school and completing regular graduation requirements or passing the GED or other equivalency examination.

The effects of obtaining alternative high school graduation credentials have not been studied carefully. Little is known about the social, economic and educational consequences of obtaining high school graduation credentials outside of regular day school programs. However, there is some indication that holders of alternative credentials may not do as well after high school as regular day school graduates.

- Researchers at the University of Wisconsin have found that GED holders who enrolled in college were much less likely to graduate than regular day high school graduates (Tugend, 1986).

A high school equivalency credential may represent an intermediate status between high school dropout and regular day school graduate. The Wisconsin data indicate that many GED recipients have serious academic shortcomings, and perform academically at relatively low levels. At the same time, though, obtaining a high school equivalency credential shows a degree of persistence and ambition exceeding that of the typical high school dropout.

Further research is needed on the characteristics and experiences of holders of high school equivalency credentials, and differences in the consequences of alternative routes to high school completion. While the alternative credential holder may not be as successful as a regular day school graduate, he or she may be more successful than a dropout who never returns to the educational system.

Implications

The analyses of high school dropouts reported here have several implications for educational policy and research. Two important issues informed by this discussion are dropout prevention/intervention programs and the significance of a high school diploma.

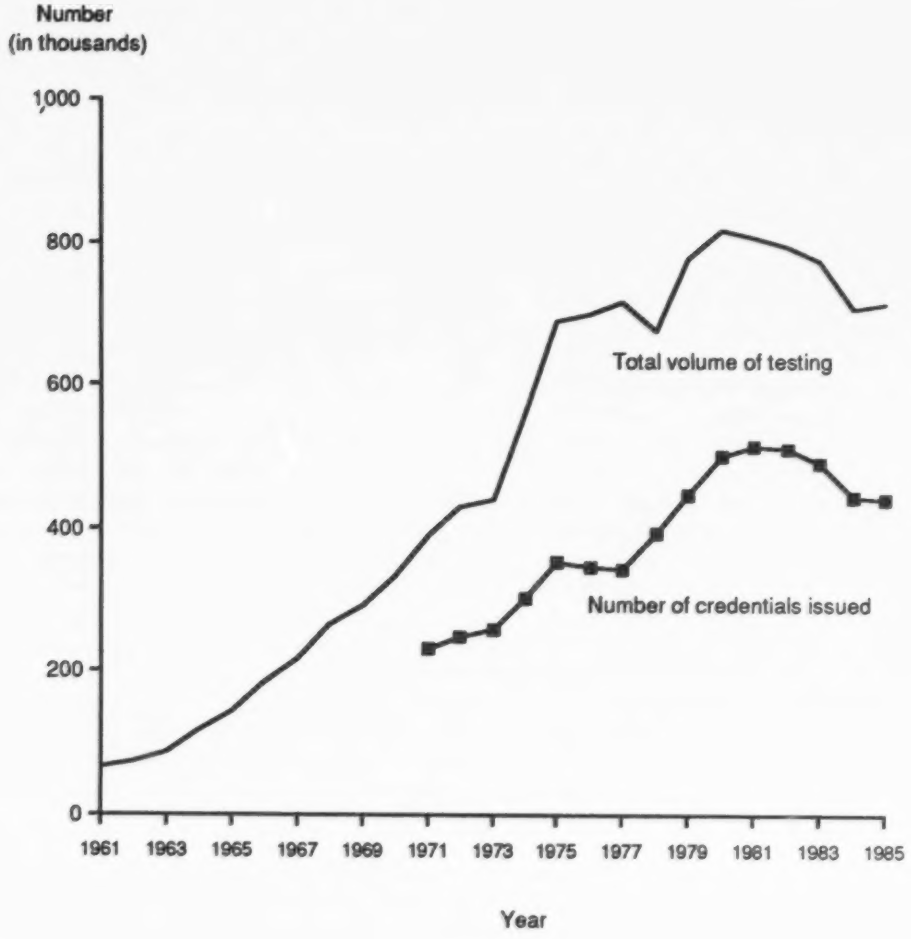
Table 3

Proportion who have completed high school by age, October 1985

Age	Proportion who have completed high school
18	67.6
19	81.5
20	84.7
21 to 25	85.4
26 to 30	85.8
31 to 34	87.4

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1985, School Enrollment Supplement, special tabulations.

FIGURE 2 -- Total volume of testing and number of credentials issued by the General Educational Development (GED) Testing Service: 1961 to 1985



SOURCE: General Educational Development Testing Service of the American Council on Education. *The 1985 GED Statistical Report.*

Dropout Prevention/Intervention Programs

Three key facts about the process of dropping out, which were highlighted earlier in the paper, are relevant to the implementation of dropout prevention and intervention programs.

- Many of the processes involved in dropping out, such as poor grades and delinquent behavior, begin long before the high school years.
- A substantial number of students drop out of school for reasons apparently unrelated to their schooling experiences, such as assuming adult family and work roles.
- Many dropouts later return to the educational system to complete high school.

Schooling is a cumulative phenomenon, and programs in the 10th or 11th grade may not counterbalance longstanding academic problems. Programs targeting high school-aged youth may be too late to have much of an effect on schooling plans. On the other hand, patterns of behavior in the elementary grades are good predictors of patterns in later grades (Bloom, 1964).

- Since poor academic performance and social adjustment are among the best predictors of who drops out of school, it is possible to identify youngsters at-risk of dropping out before the high school years.
- Dropout prevention programs may need to deliver services to at-risk youngsters in the early grades.

Not all students who drop out do so because of school problems, however. Many drop out because of economic and family considerations. For some of these students, dropping out may be a rational decision in the short term in the face of less desirable alternatives. The high school completion rate for these students may be raised by strategies that either allow them to stay in school while meeting their other obligations or facilitate their later return to the educational system. Examples of programs that might encourage such students to remain in school include:

- Cooperative arrangements that combine school with work experience or childrearing (Lotto, 1982), and
- Programs that allow for a more flexible use of time, perhaps by lengthening a 4-year program to 5 years (McDill et al., 1986).

However, a demonstration program that provided part-time jobs during the school year and full-time jobs during the summer to dropouts or potential dropouts on the condition they stay in or return to school did not decrease the likelihood of dropping out (Borus, 1985).

Since many dropouts come to believe that leaving school was a bad decision (Peng, 1985) and a substantial share of them return to school, another area where additional effort might be productive is alternative programs. The success of efforts to encourage dropouts to become returnees hinges on identifying the target population of out-of-school youngsters who lack a high school diploma, and understanding why they left school.

- Interventions designed to bring young people back to school need to be fashioned in light of the dropouts' previous educational histories as well as their current needs.

Alternative High School Credentials

In contemporary society a high school diploma signifies successful completion of a program of studies that many believe provides at least minimal preparation for adult roles and responsibilities. A high school diploma is also thought to certify certain levels of academic performance, persistence, and dependability. Employers may require a high school diploma of prospective employees as a screening device, to ensure minimum levels of these valued traits.

The ways of completing high school have expanded considerably beyond regular day school programs to include the GED examination and other equivalency examinations.

- Little is known about the implications of obtaining varying types of credentials.
- It would be desirable to understand better who receives which credentials, and what the consequences of obtaining these various high school credentials might be.

If different credentials signify different skills, aptitudes, and traits, then it is important for employers, policymakers, and school officials to be aware of these differences.

Footnotes

[1] Figure 1 is drawn from the standpoint of the completion of the path (in other words, where an individual ends up). At any given time, an individual may be in progress, which means that an individual's status can change over time. The figure does not reflect an intermediate status for returnees, perhaps called "reenrollees," who are currently enrolled but whose eventual status is unknown. Returnee-completers may enter and leave the educational system more than once before completing.

[2] Other problems with Census and CS data are detailed in Pallas and Verdugo (1986) and Verdugo and Pallas (1985).

[3] The data were derived from earnings reported in 1979, but they have been converted to constant dollars based upon consumer prices in 1981.

[4] People of all ages take the GED, but approximately three-quarters are between 18 and 34 (GED Testing Service, 1986). That age group grew by about 80 percent between 1961 and 1985, while GED test-takers were increasing more than tenfold.

Appendix

Data Sources

Current Population Survey (CPS). The CPS is a household sample survey conducted monthly by the Bureau of the Census. The October CPS asks household informants about the school enrollment and educational attainment of household members. The education items of interest elicit the highest grade of school attended, whether that grade was completed, current enrollment status, and for high school graduates age 14-34, the year of high school graduation. The CPS surveys approximately 60,000 households each month, which represent about 150,000 household members.

Common Core of Data (CCD). The CCD program is a coordinated effort administered by the Center for Statistics (CS) to acquire and maintain data on States and local public school districts. The CCD program includes a universe survey of State education agencies and education agencies of the District of Columbia and outlying areas. The survey collects data on enrollments by grade and numbers of high school graduates in regular day programs each year for each of the State education agencies. The CCD collects data only from public schools. The data reported here refer only to regular day school graduates, and not to the GED or other nonregular day school credentials.

High School and Beyond (HS&B). HS&B is part of CS' Longitudinal Studies Program, which is designed to study the educational and career development of high school students. In the spring of 1980, CS surveyed more than 30,000 high school sophomores in more than 1,000 public and private high schools across the country. When properly weighted, the sample projects to the population of 3,800,000 high school sophomores enrolled in U.S. schools in the spring of 1980. CS subsequently has resurveyed a sample of these students in the spring of 1982 and again in the spring of 1984. The study also retrieved the high school transcripts of a large sample of respondents. From these various pieces of information, it is possible to reconstruct fairly completely the enrollment histories of these youngsters. For those who left school at any time during the survey period, the study can identify when they left school, whether they returned, and whether they eventually obtained a regular high school diploma or equivalent. The major drawback to this study is that students were originally surveyed late in the sophomore year of high school, and hence it provides no information about those who had already left school by that point.

Reliability of Estimates

The data reported in Tables 1 and 3 of this report are from the Current Population Survey conducted by the Bureau of the Census. Because these proportions are derived from a sample survey, they are subject to sampling variability. The methodology for estimating the sampling errors for CPS data is presented in most of the publications in the Current Population Reports series published by the Bureau of the Census. All comparisons cited in the text are statistically significant at the 0.05 level of significance. This means that the difference between two sample estimates is greater than 1.96 times the standard error of the difference.

A generalized standard error has been estimated for the CPS percentages in Table 1. The approximate standard error for the estimated percentages is 0.8 percent. The chances are about 95 out of 100 that an estimate from the sample would differ from a complete census by less than twice the standard error, or 1.6 percent. This implies that, for 1985, the chances are about 95 out of 100 that the estimated percentage (74.6 percent) of 18- and 19-year-olds who have completed high school is within 1.6 percent of the result from a complete census.

Tables A1 and A2 show estimated standard errors for Tables 2 and 3 respectively. For Table 3, the chances are about 95 out of 100 that the estimated proportion (85.4 percent) of 21- to 25-year-olds who have completed high school is within 0.8 percent of the result from a complete census.

Table A1

Standard errors and sample sizes for Table 2: Dropout rates for 1980 high school sophomores by sex and selected background characteristics

Background characteristic	Standard error in percent (Sample size)		
	Total	Male	Female
All students	.33 (28,119)	.48 (13,905)	.45 (14,214)
Race/ethnicity			
American Indian and Alaskan natives	4.22 (297)	5.65 (159)	6.34 (138)
Hispanic	.87 (5,039)	1.21 (2,589)	1.24 (2,450)
Black	.99 (3,712)	1.55 (1,721)	1.25 (1,991)
White	.38 (18,545)	.56 (9,162)	.53 (9,383)
Asian American	1.34 (426)	2.01 (213)	1.78 (213)
Socioeconomic status			
High	.45 (6,312)	.70 (3,356)	.52 (2,956)
Middle	.42 (12,139)	.61 (5,931)	.56 (6,208)
Low	.76 (6,318)	1.15 (2,819)	1.02 (3,499)
Unknown	1.29 (3,350)	1.76 (1,799)	1.88 (1,551)
Community type			
Urban	.78 (6,384)	1.17 (3,080)	1.05 (3,304)
Suburban	.44 (13,760)	.64 (6,799)	.60 (6,961)
Rural	.60 (7,975)	.86 (4,026)	.83 (3,944)
Geographic region			
Northeast	.64 (6,282)	.98 (3,092)	.81 (3,189)
North Central	.58 (7,986)	.83 (3,960)	.81 (4,026)
South	.61 (8,802)	.90 (4,303)	.83 (4,499)
West	.84 (5,050)	1.17 (2,550)	1.18 (2,500)
School type			
Public	.36 (24,611)	.52 (12,000)	.49 (12,411)
Catholic	.47 (2,616)	.82 (1,167)	.53 (1,449)
High school program			
Academic	.33 (8,831)	.52 (4,144)	.44 (4,687)
General	.50 (11,359)	.71 (5,608)	.71 (5,751)
Vocational/technical	.80 (5,119)	1.17 (2,622)	1.08 (2,497)

SOURCE: U.S. Department of Education, National Center for Education Statistics (1983), *High school dropouts: Descriptive information from High School and Beyond*, NCES 83–221b.

Table A2

Standard errors for Table 3: Proportion of high school completers by age, October 1985

Age	Standard error in percent
18	1.1
19	.9
20	.8
21 to 25	.4
26 to 30	.4
31 to 34	.4

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1985, School Enrollment Supplement, special tabulations.

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1986 Condition of Education

p. 175 Correct figures for the enrollment declines between 1978 and 1985 are:

- 1.9 percent for 18- to 24-year-olds; and
- 8.4 percent for 18- to 21-year-olds.

p. 176 Correct figures for the enrollment increases among the baby-boom cohort between 1978 and 1985 are:

- 22.0 percent for students 25 and older; and
- 27.5 percent for students 35 and over.

Growth in Higher Education Enrollment: 1978 to 1985

by Phillip Kaufman

Overview

College education in the United States has grown considerably in the past forty years. Since 1950, enrollment has increased by over 300 percent, while the number of institutions has increased almost 80 percent (U.S. Department of Education, 1986b). During this period the nation's student body has grown increasingly more diverse, with greater numbers of women, minorities, part-time students, and older adults enrolling in colleges and universities.

At the end of the 1970's, however, some analysts saw in the projected decline of the 18- to 24-year-old population evidence for college enrollment declines in the 1980's. As of 1985, these overall enrollment declines have not occurred, and, in fact, college enrollment increased in the early 1980's. This paper examines the factors which have contributed to the increase in college enrollment since 1978, and discusses the possible impact of these factors on future levels of college enrollment. The major findings include:

Trends in enrollment, 1978-1985

- Enrollment has increased despite declines in the 18- to 24-year-old population.
- The major factor in the enrollment increases since 1978 has been higher enrollment rates for 18- to 24-year-olds.
- The other factor contributing to increases in higher education enrollment in recent years has been increased enrollment by women, particularly those 25 and older.

Implications

- The two factors which kept enrollment high in the late 1970's and early 1980's may be transitory.
- Enrollment rates for women 25 and older may decline as more women attend college prior to the age of 25.
- The enrollment rate for 18- to 24-year-olds may decline as higher proportions of college-age persons come from groups with traditionally lower college-going rates.
- Therefore, while enrollments have remained high in the early 1980's, a decline in the late 1980's and early 1990's may occur.

Data

The data for this analysis come from two sources: the Department of Education's Higher Education General Information Survey (HEGIS) and the Bureau of the Census' Current Population Survey (CPS). In this paper, the data source(s) used are indicated in parentheses at the beginning of each section. The analysis scheme for this paper is based, in part, on a report prepared for the Center for Statistics by Carol Frances (1986) of Washington Resources Inc.

Although both CPS and HEGIS publish October enrollment data, HEGIS obtains its data from reports submitted by the colleges and universities, while CPS obtains enrollment data as part of a periodic sample survey of households. Therefore, HEGIS is a census of its population while CPS is a sample survey.[1]

CPS collects data on individual students which makes detailed analyses about student characteristics possible. For example, CPS is the only source of national data on college enrollment by age.[2]

Trends in Enrollment, 1978-1985

Throughout the last decade, many analysts and college administrators expressed concern about enrollment declines in the 1980's. Pointing to the declining population of 18- to 24-year-olds, some analysts predicted decreases of 15 to 20 percent in total enrollment between 1981 and 1995 (Crossland, 1981; Carnegie Council on Policy Studies in Higher Education, 1980).[3] Contrary to the predictions of these analysts, however, while the 18- to 24-year-old population did shrink 2.9 percent between 1978 and 1985, and the 18- to 21-year-old population declined 9.2 percent, total enrollment in higher education increased over 12 percent in that period.

Patterns in college enrollment can be analysed from several perspectives. For example, the total number of 18-year-old women students can be shown as the proportion of all college students or as the proportion of all 18-year-old women. Each comparison tells a slightly different story, and has its own importance. One yields information about the current mix of students on college campuses, while the other indicates the college-going rate for 18-year-old women.

The following sections use both types of comparisons to discuss several factors which have contributed to trends in college enrollment since 1978. Furthermore, in discussing these factors, this paper divides recent trends in college enrollment into two periods, 1978 to 1983 and 1983 to 1985. During the first period, enrollment rose each year and in the second period, total enrollment declined in 1984 and then increased in 1985.[4]

Gender (CPS). Women as a proportion of all college students[5] steadily grew through the late 1970's and early 1980's.

- Women as a proportion of all college students rose from 49.9 percent in 1978 to 52.9 percent in 1985.
- Women accounted for 63.7 percent of the increase in college attendance between 1978 and 1983.
- Between 1983 and 1985 the number of men enrolled in college decreased 1.7 percent, while the number of women continued to increase.

The increase in women students was the result of a rising proportion of all women 14 and older attending college, from 6.3 to 6.6 percent.[6] At the same time, men's college-going rate was declining, from 7.0 to 6.7. The gap between men's and women's college-going rates had disappeared by 1985.

Age (CPS). Between 1978 and 1985, the number of college students 25 and older increased considerably (Figure 1). This increase was due to growth in the age group, as the large baby-boom cohort grew older, rather than a change in participation rates for persons over 25.

- The number of students 25 and older grew by 16.7 percent between 1978 and 1985, while the number of students 35 and older grew by 25.2 percent.
- Over the 1978-85 period, the college-going rates for each of the age groups over 24 remained constant—about 9 percent for 25- to 29-year-olds, 6 percent for 30- to 34-year-olds, and about 1.5 percent of those 35 and over.

For those 18 to 21, enrollment rates increased between 1978 and 1983. Over that time period the number of 20- to 21-year-old students increased and the number of 18- to 19-year-old students was relatively stable. The population age 18 to 21 *shrank* by almost 9 percent between 1978 and 1985.

- The number of 18- to 21-year-olds enrolled in college increased by 6.3 percent between 1978 and 1985 (Table 1) (U.S. Department of Commerce, 1986).

What some analysts could not foresee in making their predictions of decline in the late 1970's was that the proportion of 18- to 21-year-olds attending college would increase substantially, from 31.9 percent in 1978 to 37.1 percent in 1985. If college-going rates had remained in 1985 what they were in 1978, the decrease in the 18- to 21-year-old population would have resulted in a decrease of more than 700,000 students.

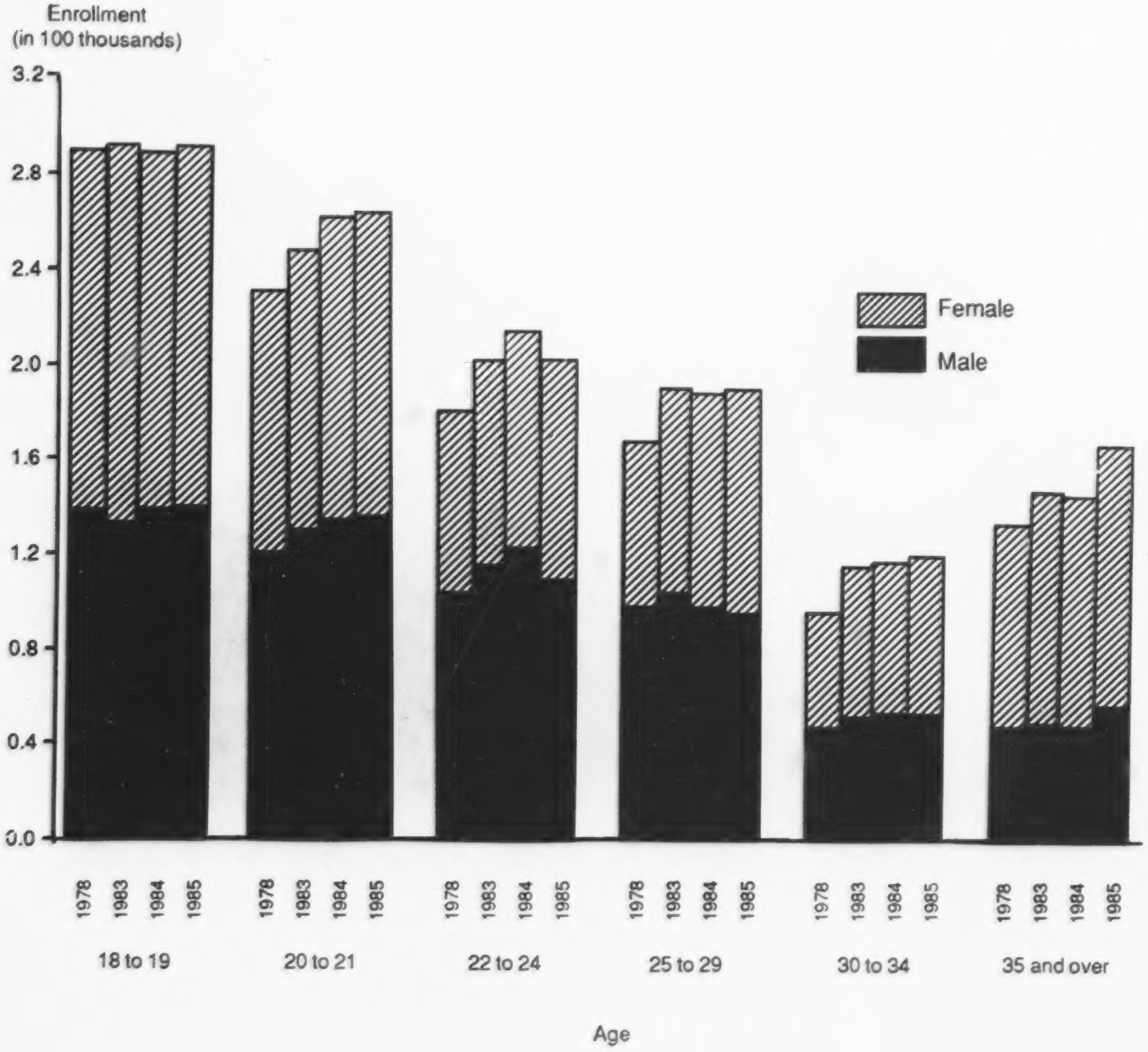
- The increase in the participation rate for 18- to 21-year-olds contributed to college enrollment being almost 330,000 higher in 1985 than it was in 1978.

This increase in college-going rates more than compensated for the reduced size of the 18- to 21-year-old applicant pool.

Age by gender. The increase in college-going rates for 18- to 21-year-olds was greater for women than for men.

- The participation rate for men age 18 to 21 increased 4.8 percentage points, from 32.9 percent to 37.7 percent between 1978 and 1985.
- Women, 18 to 21, increased their college-going rate by 6.4 percentage points (31.1 percent to 37.5 percent).
- If the college-going rate in 1985 for women, age 18 to 21, had been what it was in 1978, college enrollment of 18- to 21-year-olds would have been 490,000 less than it actually was in 1985.

FIGURE 1 -- **Higher education enrollment, by gender and age: 1978 to 1985**



SOURCE: U.S. Department of Commerce, Bureau of the Census, *School Enrollment -- Social and Economic Characteristics of Students: October 1984* and public use data tape, October 1985 School Enrollment Supplement to Current Population Survey.

Table 1

College enrollment and total population by age category: 1978 to 1985

Age and sex	1978	1979	1980	1981	1982	1983	1984	1985
	(In thousands)							
Population								
18 to 21	16,245	16,835	16,813	16,701	16,533	15,858	15,387	14,883
18 to 24	27,647	29,028	29,259	29,277	29,083	28,580	28,031	27,122
25 and older	123,774	130,613	133,309	135,958	138,911	138,894	141,755	144,389
College enrollment Both sexes								
14 and older	11,141	11,380	11,387	12,127	12,308	12,320	12,304	12,524
18 to 21	5,197	5,197	5,356	5,589	5,618	5,435	5,464	5,524
18 to 24	6,995	6,991	7,226	7,575	7,678	7,477	7,591	7,537
25 and older	3,872	4,077	3,910	4,321	4,377	4,583	4,460	4,724
Male								
14 and older	5,580	5,480	5,430	5,825	5,899	6,010	5,989	5,906
18 to 21	2,593	2,533	2,615	2,689	2,722	2,650	2,710	2,740
18 to 24	3,621	3,508	3,604	3,833	3,837	3,815	3,929	3,827
25 and older	1,853	1,843	1,730	1,895	1,950	2,082	1,968	2,025
Female								
14 and older	5,559	5,900	5,957	6,303	6,410	6,310	6,315	6,618
18 to 21	2,604	2,664	2,741	2,900	2,896	2,779	2,754	2,784
18 to 24	3,374	3,483	3,622	3,742	3,841	3,651	3,662	3,710
25 and older	2,019	2,234	2,180	2,426	2,427	2,499	2,492	2,699

SOURCE: U.S. Department of Commerce, Bureau of the Census, *School Enrollment–Social and Economic Characteristics of Students: October* (various years) (Current Population Reports, Series P–20), and special tabulations.

The number of men attending college remained generally constant between 1978 and 1985 across all age groups.[7] Women students increased in almost all age groups, with particularly large increases for those 25 and older.

- Indeed, 49.2 percent of the increase in *total* enrollment between 1978 and 1985 came from women 25 or older.

- This increase in the number of women college students, 25 and older, was due both to growth in the number of women in this age group and an increase in the college-going rate for such women.

2-year/4-year (HEGIS) and attendance status (CPS). The growth in total enrollment during the late 1970's and early 1980's was concentrated primarily in 2-year institutions. However, enrollment in such institutions has been declining in recent years.

- Enrollment in two-year institutions increased by 18.5 percent between 1978 and 1982, accounting for two-thirds of the expansion of total (head count) enrollment in that period.

- Since 1982, enrollment in 2-year institutions has decreased 5.1 percent. Since 1983, the decline in 2-year enrollment has accounted for 88.0 percent of the head count enrollment decrease reported by HEGIS.

The proportion of students enrolled part-time remained fairly constant between 1978 and 1985. In 1978, part-time students comprised 29.5 percent of undergraduate students and 35.5 percent of all college students. In 1985, 30.4 percent of undergraduate students and 35.9 percent of all college students were attending part-time.

While the proportion of part-time students has remained unchanged, women now account for a larger share of part-time students than before.

- Women part-time students grew as a proportion of all students—from 16.4 percent of undergraduate students and 31.7 percent of graduate students in 1978 to 18.4 percent of undergraduate students and 32.7 percent of graduate students in 1985.

- The proportion of men attending part-time actually decreased over the same period.

Implications

Analysts' predictions in the late 1970's of declining college enrollment in the early 1980's proved to be unfounded. Despite a shrinking 18- to 24-year-old population, a continuing increase in the number of older women students and a rise in the college-going rate of 18- to 24-year-olds contributed to a growth in college enrollment during the first half of the 1980's. However, the expansion in enrollment since 1978 may only have postponed an eventual downturn.

Decline is likely to come, but somewhat later and less severe than had been originally predicted. Center for Statistics' projections of future enrollment predict moderate enrollment declines in the future.[8] Overall head count enrollment levels are projected to be only about six percent lower in 1992 than they were in 1985, rather than the drastic decrease earlier predicted by some observers. Since all of the projected decline is in full-time students, full-time-equivalent enrollment could drop faster than total head count enrollment (full-time plus part-time enrollment) (U.S. Department of Education, 1985).

This paper has outlined national trends in enrollment, but the coming enrollment decline will not be evenly distributed across institutional types or across regions of the country. These enrollment declines, although moderate at the national level, could be quite severe within certain types of institutions (Leslie & Conrad, 1985).

- Prestigious institutions with large applicant pools and low-cost community colleges might experience little if any decline, while other types of institutions could suffer considerable enrollment losses.

- Enrollment patterns at individual institutions will be affected by institutional characteristics, such as location, the nature and extent of competition from neighboring and similar institutions, and the types of programs offered.

As Frances (1981) has pointed out, the impact of decline on individual institutions may depend on how those institutions are currently planning for the future.

Nevertheless, overall decline in college enrollment appears likely for several reasons.

- The full impact of the declining population of 18- to 24-year-olds has not yet been felt; the number of persons 18- to 24-years-old will continue to decline through 1996 (U.S. Department of Education, 1985).

- For a variety of reasons, the two factors which sustained enrollments in the early 1980's and which offset the decline in the 18- to 24-year-old applicant pool—increases in the number of women students, especially older women students, and higher participation rates among younger students—may be transitory.

Older women students. As outlined above, part of the increased college enrollment in the 1980's came from increases in the number of women students over 25. However, the phenomenon of large numbers of older female students may be a temporary one. Many of the women who enrolled in higher education in their late 20's and 30's in the early 1980's had chosen not to attend college in the 1970's, when they were the traditional age (18 to 24) to attend college. Enrollment rates for women 18 to 24 in the 1970's were 3 to 5 percentage points lower than they are now.[9] With more young women today choosing to attend college in their early 20's, there should be fewer women in this cohort who have not already attended college by the time they are 25. Attendance rates for older women may consequently decline in the future.

Eighteen- to 24-year-olds. Another major factor contributing to the enrollment increases in the early 1980's was higher enrollment rates for the traditional college-age population than in the 1970's. Those higher rates may not persist in the future.

Historically, college attendance rates for whites have been substantially above those for blacks and Hispanics (U.S. Department of Education, 1986a, indicator 2:9). One reason for lower college attendance rates among blacks and Hispanics is the relatively smaller pools of potential college students due to lower high school graduation rates. For example, in 1984, for those age 18 to 24, the proportions of high school graduates were 10 to 20 percentage points lower for blacks and Hispanics than for whites. In addition, college-going rates for black and Hispanic high school graduates are lower than those for white high school graduates (Table 2).

The number of both Hispanics and blacks, age 14 to 34, enrolled in college increased between 1978 and 1984—by 39.0 and 11.6 percent respectively, while total enrollment of those 14 to 34 grew by 10.4 percent. During the period, Hispanics increased as a proportion of all college students from 3.8 to 4.8 percent. Since black enrollment grew at approximately the same rate as total enrollment, the proportions of black students, age 14 to 34, in 1978 and 1984 were about the same—10.4 and 10.5 percent respectively (U.S. Department of Commerce, 1985).

In addition, since the number of black and Hispanic students, age 18 to 21, grew at about the same rate as the black and Hispanic population, age 18 to 21, black and Hispanic college-going rates for this age group have remained essentially the same since 1978, around 25 percent for blacks and 23 percent for Hispanics (Department of Commerce, 1985).[10] The increase in enrollment rates for all 18- to 21-year-olds in this period was due to increased participation by whites.

In the future, an increasing share of the college-age population will be comprised of persons from minority groups (Hodgkinson, 1985 and 1986). Whether the changing racial/ethnic composition of the college-age population will result in any decline in enrollment will depend on future enrollment trends for blacks and Hispanics. Recent evidence does not suggest increases in the college-going rates for blacks and Hispanics, despite recent growth in high school graduation rates for these groups (U.S. Department of Commerce, 1985). If current patterns persist, the national college-going rate may decline for all 18- to 24-year-olds, as blacks and Hispanics comprise a larger proportion of that age group.[11]

Table 2

Persons 18- to 24-years-old, by high school graduation status, college enrollment status and race/ethnicity: 1978 to 1984

Race/ethnicity and year	Percent high school graduates	Percent of high school graduates enrolled in college
White		
1984	83.0	33.7
1983	82.2	32.9
1982	82.4	33.1
1981	82.2	32.5
1980	82.6	31.8
1979	82.1	31.2
1978	82.6	31.1
Black		
1984	74.7	27.2
1983	70.9	27.0
1982	70.9	28.0
1981	70.9	28.0
1980	69.7	27.6
1979	67.1	29.5
1978	67.8	29.7
Hispanic[1]		
1984	60.1	29.9
1983	54.8	31.4
1982	57.6	29.2
1981	55.8	29.9
1980	54.1	29.8
1979	55.2	30.2
1978	55.9	27.2

[1] Hispanics may be of any race.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *School Enrollment-Social and Economic Characteristics of Students: October 1984*, 1985.

Footnotes

[1] The estimates of college enrollment reported by HEGIS include all persons currently enrolled in college. CPS estimates of college enrollment exclude all members of the military. HEGIS enrollment counts are generally 100,000 more than CPS.

[2] The Center for Statistics has periodically published HEGIS data disaggregated by age. These estimates are derived by projecting CPS age distributions on HEGIS enrollment figures. HEGIS does not directly collect age data.

[3] Some analysts at the time, anticipating an increase in the enrollment of older students, predicted no such decline in overall enrollment (Bowen, 1980). Furthermore, some of the projections (the intermediate and high alternative projections) by the National Center for Education Statistics in 1980 (U.S. Department of Education, 1980) predicted a continued increase in college enrollment in the early 1980's and decrease after 1983.

[4] While CPS and HEGIS enrollment estimates are consistent in showing enrollment decline in 1984 and an increase in 1985, none of the enrollment changes recorded in CPS between 1983 and 1985 are statistically significant.

[5] College or higher education enrollment, as defined in this report, includes persons attending a 4-year or 2-year college, university or professional school (such as medical or law school), in courses that may advance the student toward a recognized college or university degree. Attendance may be either full-time or part-time, undergraduate or graduate.

[6] College enrollment rates are computed as the ratio of persons enrolled in college (either full-time or part-time) to the number of persons in the civilian (non-institutional) population. Thus, the college enrollment rate for a particular age group can be altered by a change in either the numerator or the denominator. For example, if the number of college-age men who enter the Armed Forces declines, the denominator (the number of civilians) of the fraction would increase and the college enrollment rate would decrease. Participation rates reported here are based on the civilian (non-institutional) population.

[7] Overall the number of men aged 14 and older enrolled in college significantly increased between 1978 and 1985. However, none of the increases within age groups were statistically significant.

[8] The discussion of projected enrollment is based on actual enrollment through 1982 and projected enrollment (under the CS intermediate alternative) from 1983 to 1992. The projections are based on 1982 data. CS staff are currently preparing new projections based on 1985. The data are:

Enrollment
(In thousands)

Year	FTE	Full-time	Part-time
1970	6,737	5,815	2,766
1971	7,148	6,078	2,871
1972	7,254	6,072	3,143
1973	7,454	6,189	3,413
1974	7,806	6,370	3,854
1975	8,481	6,841	4,343
1976	8,313	6,717	4,295
1977	8,414	6,792	4,492
1978	8,336	6,667	4,593
1979	8,488	6,794	4,776
1980	8,749	7,098	4,999
1981	9,012	7,181	5,190
1982	9,092	7,221	5,205
		Projected	
1983	8,954	7,066	5,311
1984	8,852	6,936	5,389
1985	8,730	6,790	5,457
1986	8,607	6,645	5,517
1987	8,547	6,566	5,570
1988	8,533	6,541	5,600
1989	8,530	6,524	5,637
1990	8,446	6,430	5,663
1991	8,326	6,303	5,686
1992	8,166	6,152	5,658

SOURCE: U.S. Department of Education, *Projections of Education Statistics to 1992-93*, 1985.

[9] Peng and Fetters (1978) showed that female enrollment rates actually decreased during the period 1961 to 1972.

[10] Not only do minorities (with the exception of Asians) have lower enrollment rates, they also have higher attrition rates (Carroll, 1985).

[11] However, the trends at subnational levels—regions, States, and individual institutions—may be quite different, depending upon the racial/ethnic composition of the applicant pool. In States with stable proportions of blacks and Hispanics, recent increases in the high school graduation rates for blacks and Hispanics may *increase* the college going-rates for some younger age groups.

Appendix

Reliability of estimates

All comparisons cited in the text are statistically significant at the 0.05 level of significance. This means that the difference between two sample estimates is greater than 1.96 times the standard error of the difference.

Table A1

Standard errors for Table 1: College enrollment and total population by age category: 1978 to 1985

Age and sex	1978	1979	1980	1981	1982	1983	1984	1985
	(In thousands)							
Population								
18 to 21	162	164	176	176	175	172	170	168
18 to 24	192	195	209	209	209	208	207	205
25 and older	789	824	898	912	928	928	944	958
College enrollment Both sexes								
14 and older	139	141	151	155	156	156	156	157
18 to 21	99	99	108	110	110	108	109	109
18 to 24	114	114	123	126	127	125	126	126
25 and older	86	88	93	97	98	100	99	101
Male								
14 and older	102	102	100	112	113	114	113	113
18 to 21	71	70	77	78	78	77	78	78
18 to 24	83	82	89	92	92	92	93	92
25 and older	60	60	63	65	66	68	67	68
Female								
14 and older	102	105	113	116	117	116	116	119
18 to 21	71	72	78	80	80	79	78	79
18 to 24	81	82	89	91	92	90	90	91
25 and older	63	66	70	74	74	75	75	70

SOURCE: U.S. Department of Commerce, Bureau of the Census, *School Enrollment—Social and Economic Characteristics of Students: October (various years)* (Current Population Reports, Series P–20), and special tabulations.

Table A2

Standard errors for Table 2: Persons 18- to 24-years-old, by high school graduation status, college enrollment status and race/ethnicity: 1978 to 1985

Race/ethnicity and year	All persons	Percent high school graduates	Percent of high school graduates enrolled in college
White			
1984	23,347	0.4	0.4
1983	23,899	0.4	0.4
1982	24,206	0.4	0.4
1981	24,486	0.4	0.4
1980	24,482	0.4	0.4
1979	23,895	0.4	0.4
1978	23,650	0.4	0.4
Black			
1984	3,862	1.1	1.0
1983	3,865	1.2	1.0
1982	3,872	1.2	1.0
1981	3,778	1.2	1.0
1980	3,721	1.2	1.0
1979	3,510	1.2	1.1
1978	3,452	1.2	1.1
Hispanic[1]			
1984	2,018	1.6	1.2
1983	2,025	1.6	1.2
1982	2,001	1.6	1.2
1981	2,052	1.6	1.2
1980	2,033	1.6	1.2
1979	1,754	1.8	1.3
1978	1,672	1.8	1.3

[1] Hispanics may be of any race.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *School Enrollment-Social and Economic Characteristics of Students: October 1984*, 1985.

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Private School Enrollment and Tuition Trends

by Mary Frase Williams

Overview

Private schools are an integral part of American education, and no discussion of the condition of American education would be complete without including private schools. They educate a substantial number of students, offer a wide range of educational programs and philosophies, and provide alternatives to the public schools. Unfortunately, there is considerably less national data available about private schools than about public schools. In particular, there is relatively little information about the diversity among different types of private schools. In some cases data are available for comparing religiously-affiliated with nonreligiously-affiliated schools or Catholic schools with nonCatholic religiously-affiliated schools, but generally there is scant information about differences among nonCatholic religiously-affiliated schools, whose enrollments have grown in the past 10 years. The Center for Statistics is currently upgrading its own data collection on private schools and is working with the national associations for private schools—including fundamentalist and evangelical Christian schools—to utilize the data they collect about their member schools.

This paper discusses recent trends in private school enrollment and tuition levels, two topics for which there are considerable national data available over time and which relate to a number of salient policy issues. The paper examines trends in private school enrollment—total enrollment and by level and control of school. In addition, variations in private school enrollment rates[1] across regions, community types, and family background characteristics are discussed. Similar analyses are presented for trends in private school tuition. The major findings are:

Enrollment

- The two national data sources—Center for Statistics and Bureau of the Census—on private school enrollment have not agreed upon the number and proportion of private school students in recent years. The variation may be related to differences in the way the data are collected by the two agencies.
- The Center for Statistics reported that there were 5.7 million private school students in 1983-84 and that 12.6 percent of American students attended private schools in that year.
- The Bureau of the Census reported considerably lower numbers and proportions of private school students. Census' data show the percentage of students in kindergarten through 12th grade attending private schools as approximately 11 percent in 1985, which is the same as it was in 1970.
- The proportion of all students attending private schools decreased in the first half of the 1970's and has increased since 1979.
- Most children who attend private schools are in church-related schools—approximately 86 percent in 1979, 1982, and 1985. The proportion of children attending Catholic schools has declined in recent years while the proportion attending other church-related schools has increased.
- The vast majority of private school students are from low- and middle-income families.
- The likelihood that a child will attend a private school increases as family income and education rise.
- Hispanic children are as likely as whites to attend private schools, when family income is taken into account. However, black children generally are less likely to attend private schools than white children, even when family income is taken into account.
- According to the data collected by the Bureau of the Census, the number and proportion of private school students who are black have declined since 1979. Over that period the number of Hispanic students remained approximately the same.

Tuition

- Tuition and fees are higher for students in high school than elementary school, nonchurch-related than church-related schools, and other religiously-affiliated schools than Catholic schools.

- Tuition and fees were under $1,000 for two-thirds and under $500 for one-third of all elementary school children attending church-related schools in 1985.

- Since 1979, tuition and fees in private schools have increased considerably faster than the cost-of-living.

- Families of black elementary school students pay higher tuition and fees than families of white students. One factor contributing to that pattern may be blacks paying higher tuition in parish-operated Catholic schools because they are nonparishioners.

- High income families are considerably more likely to pay very high tuition than are low- and middle-income families.

Implications

- Greater diversity in the types of private schools children attend is occurring as the proportion of private school enrollment in Catholic schools decreases and the proportion in other religiously-affiliated schools increases.

- According to data collected by the Bureau of the Census, there are mixed trends relative to diversity in the racial/ethnic backgrounds of private school students. There are fewer black students but about the same number of Hispanics attending private schools in 1985 as in 1979.

- The relative sizes of the public and private school sectors for elementary and secondary education have changed very little in recent years according to data from the Bureau of the Census.

Data

There are two major sources of national data on private school enrollment, the annual School Enrollment Supplement to the October Current Population Survey (CPS) and intermittent Private School Surveys conducted by the Center for Statistics (formerly the National Center for Education Statistics) in the U.S. Department of Education. The two sources sometimes produce differing estimates of the total number and proportion of private school students. (See the Appendix for a more extensive discussion of the two surveys.)

The Center for Statistics (CS) has periodically surveyed private schools to gather a variety of information, including enrollment data. (Only schools that contain a first grade or above are included in these surveys.) Prior to the 1983 Private School Survey, the Center used lists of private schools as the basis for conducting the survey. The methodology for the 1983 survey was changed in two respects: the survey was changed from an universe to a sample survey, and an area frame was used to augment the list of schools. The area frame did uncover a considerable number of private schools that had not previously been included in the list of schools. A similar approach was used for the Center's 1985 Private School Survey, but the results from that survey were not yet available when this publication went to press. Because of the 1983 change in methodology, Center for Statistics data cannot be used to examine trends in private school enrollment over time.

The Bureau of the Census collects data on private schools annually and the methodology has changed very little over time. Census gathers information about private schools through a household survey, the Current Population Survey (CPS). The differences in methodology—a household survey as compared to a survey of institutions—between the Bureau of the Census and the Center for Statistics may account for some of the differences in estimated numbers of private school students. CS's change in methodology may also be related to the differences, since the two sets of estimates were much closer prior to the 1983 change.

Because the CPS data are comparable over time, they are used in this paper for the analysis of trends in private school enrollment. Wherever Center for Statistics data reveal different trends or can supplement the CPS data, they are cited as well. Except for the initial discussion of enrollment levels, the presentation is limited to elementary and secondary schools, grades 1-12, since the patterns and dynamics below first grade are somewhat different.

Private School Enrollment

Total enrollment

CS estimated there were 5.7 million private school students in 1983, with 5.0 million in grades 1-12. The CPS estimate for 1983 private school enrollment in grades 1-12—4.2 million—was considerably lower than the CS estimate. The CPS estimate for kindergarten enrollment in private schools was higher than the CS estimate—656 and 427 thousand respectively (U.S. Department of Education, 1984b).[2]

CS estimates of the proportion of all students attending private elementary and secondary schools were higher than CPS estimates for 1983. Those estimates were:

- For grades K-12, 12.6 percent for CS and 10.9 percent for CPS.
- For grades 1-12, 12.0 percent for CS and 10.9 percent for CPS.

According to CPS data, the proportion of all students in kindergarten through 12th grade enrolled in private schools was 10.9 percent in 1970 and 1985, but between those two years it varied considerably (Table 1).

- Both private and public school enrollments declined in the early 1970's, but private school enrollment declined more rapidly. In the fall of 1974 the proportion of private school students was only 9.8 percent.
- Between 1974 and 1979, the proportion of private school students varied erratically, but since 1979, it has risen again.[3]

While the percent of private school students had returned to the 1970 level in the mid-1980's, the number of such students had not according to CPS data.

- There were nearly 14 percent fewer private school students in the fall of 1985 than there had been in 1970. The number of public school students also declined by 14 percent over that period.
- In the first half of the 1980's, while public school enrollment was still declining, private school enrollment in grades K to 12 stabilized.

Based on the 1983 methodology, CS data indicated a growth in private school enrollment of 7.5 percent between 1980 and 1983. However, CS does not have separate figures for private school enrollment in nursery school, kindergarten, and grades 1 to 12 for 1980. Therefore, the 7.5 percent increase includes

Table 1

Private school enrollment trends: 1970 to 1985

October of year	K-12 enrollment (In thousands)			Private school enrollment as a percentage of total K-12 enrollment
	Total	Public	Private	
1970	51,848	46,193	5,655	10.9
1971	51,953	46,575	5,378	10.4
1972	50,546	45,343	5,203	10.3
1973	49,890	44,945	4,945	9.9
1974	49,825	44,958	4,867	9.8
1975	49,522	44,521	5,001	10.1
1976	49,006	44,202	4,804	9.8
1977	48,178	43,153	5,025	10.4
1978	46,954	41,976	4,978	10.6
1979	46,006	41,343	4,663	10.1
1980	45,181	—	—	—
1981	45,598	40,897	4,701	10.3
1982	44,834	40,132	4,702	10.5
1983	44,569	39,701	4,868	10.9
1984	44,099	39,793	4,306	9.8
1985	44,660	39,788	4,872	10.9

—Not available.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *School Enrollment—Social and Economic Characteristics of Students: October 1984* (Current Population Reports, Series P–20, No. 404), 1985 and unpublished tabulations.

growth in nursery school enrollment, which is growing much faster than K-12 or 1-12 enrollment. CS also shows a growth of 13 percent in the number of private schools between 1980 and 1983 (U.S. Department of Education, 1984b).

The remainder of this paper is based on CPS data except where there is a specific reference to data from the Center for Statistics.

Grade-level. The portion of total enrollment accounted for by private schools varies by grade level. The proportion of students attending private schools is highest at the preschool level, and as children progress through school, private schools educate a decreasing percentage of all students.

- In 1985, the proportion of students attending private schools was 65.7 percent for nursery school, 15.6 percent for kindergarten, 11.4 percent for grades 1-8 and 8.7 percent for grades 9-12.

- Private school enrollment rates by level were very similar in 1985 and 1970. However, there has been a recent increase in the proportion of high school students attending private schools, from 7.4 percent of all students in 1979 to 8.7 percent in 1985.

Trends in the number of private school students differ by level. At the elementary grades (grades 1-8), which account for the bulk of private school students, enrollment dropped during the 1970's by approximately 23 percent, but has remained relatively stable since 1980. Kindergarten and high school enrollments have changed very little since 1970. Enrollment in private nursery schools, on the other hand, has grown throughout the period, more than doubling between 1970 and 1985. That growth reflects the rising rates of total preschool enrollment (Pendleton, 1986), since the proportion of nursery school students enrolled in private schools has not changed.

Type of private school. There are many different kinds of private elementary and secondary schools—day and boarding schools, religiously-affiliated and secular schools, coeducational and single-sex schools. Unfortunately, little comparable national data over time exists on enrollment trends by type of private school. Since 1979 the Bureau of the Census has periodically asked whether the private school a child was attending was "church-related" or not and the Center for Statistics classified private schools by control—Catholic, other religiously-affiliated, and unaffiliated—in the 1983 survey. While there are considerable differences among the church-related schools, little national data are available to shed light on this diversity.

The vast majority of children in private schools attend schools which are religiously affiliated. While the proportion of private school students in church-related schools has not declined in recent years, the composition of church-related schools has changed.

- In 1979, 1982, and 1985, approximately 86 percent of all private school students in grades 1-12 were enrolled in church-related schools.

- Church-related schools account for lower proportions of private school students below the first grade level—72 percent for kindergarten and 39 percent for nursery school in 1985.

Catholic schools have historically accounted for most students in church-related schools, but their relative position has been changing in the recent past. Catholic school enrollment has been declining, while enrollment in other types of religiously-affiliated schools has been increasing (U.S. Department of Education, 1984b; Cooper, McLaughlin, and Manno, 1983).

- The proportion of all private school students attending Catholic schools was 64 percent in 1980 and that percentage declined to 56 percent in 1983 (U.S. Department of Education, 1984b). Catholic schools enrolled 87 percent of all private school students in 1965-66 (Catterall, 1985).

- The proportion of students in other religiously-affiliated schools rose from 21 to 25 percent of all private school students between 1980 and 1983 (U.S. Department of Education, 1984b).

- According to Cooper (1985), the schools with the highest growth rates in enrollment in recent years among the other religiously-affiliated schools have been evangelical, Calvinist, and Lutheran schools. Also showing considerable growth have been independent schools and those serving special education students.

- According to CS estimates, the number of other religiously-affiliated schools increased approximately 20 percent between 1980 and 1983 and the number of nonreligiously-affiliated schools increased nearly 30 percent over the same period (U.S. Department of Education, 1984b).

Region and metropolitan status. Patterns of private school enrollment vary by region and type of community. In recent years regional differences in private school enrollment rates have remained about the same, while differences among types of communities have narrowed (Table 2).

- Historically, private schools have educated a higher proportion of all elementary and secondary students in central cities than in the suburbs or nonmetropolitan areas.
- Those differences have been decreasing since 1979 as private school enrollment rates have been declining in the cities, and increasing elsewhere. This pattern may reflect closing of Catholic schools in urban centers and the expansion of evangelical and fundamentalist schools in suburban and nonmetropolitan areas (Catterall, 1985).
- Private schools educate a higher proportion of students in the Northeast and North Central regions than in the South and West.
- During the 1970's, regional differences in private school enrollment rates decreased, as the rates increased in the South and West, while decreasing in the Northeast and North Central regions. The trend of narrowing regional differences did not continue into the 1980's (Table 2).

The relative importance of church-related schools differs by region, while differences among cities, suburbs, and nonmetropolitan areas in the proportion of private school students attending church-related schools are minor.

- In 1979, religiously-affiliated schools accounted for a higher proportion of private school students in the Northeast and North Central regions than in the South and West.
- Between 1979 and 1985, the proportion of church-related students declined in the Northeast and increased in the North Central region.
- In 1985, nearly all private school students in the North Central region attended a church-related school (95 percent), whereas that proportion was considerably lower in the other three regions (78 to 84 percent).

Table 2

Proportion of all students attending private schools, by region and metropolitan status

Metropolitan status and region	Proportion of October enrollment, grades 1-12, attending private schools			
	1970	1979	1982	1985
U.S.	10.5	9.8	10.0	10.5
Region:				
Northeast	17.1	12.5	13.3	14.2
North Central	13.4	11.5	11.7	12.4
South	5.7	7.8	7.4	8.2
West	6.0	7.9	8.4	8.2
Metropolitan status:				
Central city	16.4	16.0	13.7	13.8
Suburb	11.6	10.0	11.0	11.9
Nonmetropolitan	5.5	5.0	5.9	6.2

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Private School Enrollment, Tuition, and Enrollment Trends: October 1979* (Current Population Reports, Series P–23, No. 121), 1982 and unpublished tabulations; Bianchi, S., Private School Enrollment: Trends and Debates, *Research in Sociology of Education and Socialization, 3,* 1982.

Characteristics of private school students

Family income. While on average, students attending private schools come from more affluent families than public school students, most private school students are from low- and middle-income families (Figure 1).

- A majority of both public and private school students came from middle-income ($15,000 to $49,999) families in 1985—56 percent of public school students and 63 percent of private school students.

- A substantial proportion—one-seventh—of private school students came from low-income families (less than $15,000). One-third of public school students came from low-income families.

- Approximately twice as many private school students came from high-income families ($50,000 or more) as public school students—23 percent vs. 11 percent.

- There is a considerable difference between church-related and nonchurch-related private schools in terms of the family incomes of their students (Figure 1). Family incomes of the students in nonchurch-related schools are much higher than for students in church-related schools, but only a small portion (less than 15 percent) of private school students attend nonchurch-related schools.

The likelihood that a child will be enrolled in a private school rises with family income (Table 3), although even at the highest income levels, most students attend public schools. The relationship between income and private school attendance is particularly strong for nonchurch-related schools.

- In 1985, the proportion of children in grades 1-12 enrolled in church-related schools rose from 3 percent when family income was below $7,500 to 17 percent when income was $75,000 and above.

Table 3

Enrollment rates in private elementary and secondary schools by race/ethnicity, family income, and control of school: October 1985

	Proportion of children in grades 1 to 12 attending private schools					
	All children			White		
Family income	Total private[1]	Church-related	Nonchurch-related	Total private[1]	Church-related	Nonchurch-related
Total[2]	10.5	8.5	1.4	11.9	9.8	1.5
Less than $7,500	3.5	2.8	.5	4.9	4.1	.5
$7,500 to $14,999	5.7	4.7	.4	6.7	5.7	.5
$15,000 to $24,999	8.6	7.2	.8	9.4	8.2	.7
$25,000 to $34,999	13.1	11.0	1.5	13.5	11.3	1.5
$35,000 to $49,999	13.8	11.8	1.6	14.5	12.4	1.7
$50,000 and over	20.0	14.8	4.3	20.1	15.1	4.2
	Black			Hispanic[3]		
Family income	Total private[1]	Church-related	Nonchurch-related	Total private[1]	Church-related	Nonchurch-related
Total[2]	3.7	2.4	.7	6.7	6.1	.3
Less than $7,500	1.5	.8	.4	3.0	2.4	.6
$7,500 to $14,999	2.7	1.8	.2	5.1	5.1	.0
$15,000 to $24,999	3.8	2.5	.7	8.0	7.1	.2
$25,000 to $34,999	8.4	6.3	.8	10.7	9.1	1.1
$35,000 to $49,999	7.4	4.5	1.9	13.1	13.1	.0
$50,000 and over	14.7	9.3	4.7	20.2	20.2	.0

[1] Includes some students for whom control of the private school was not reported.

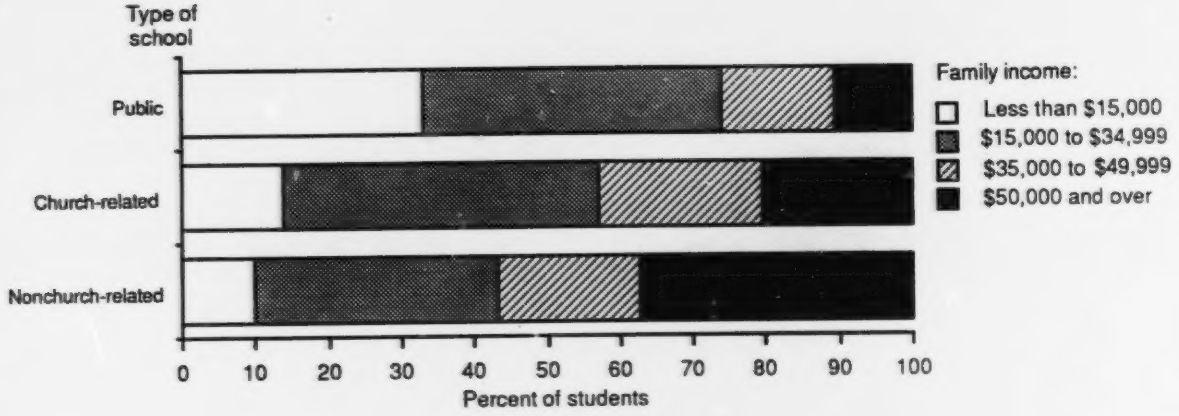
[2] Includes some students for whom family income was not reported.

[3] Hispanics may be of any race.

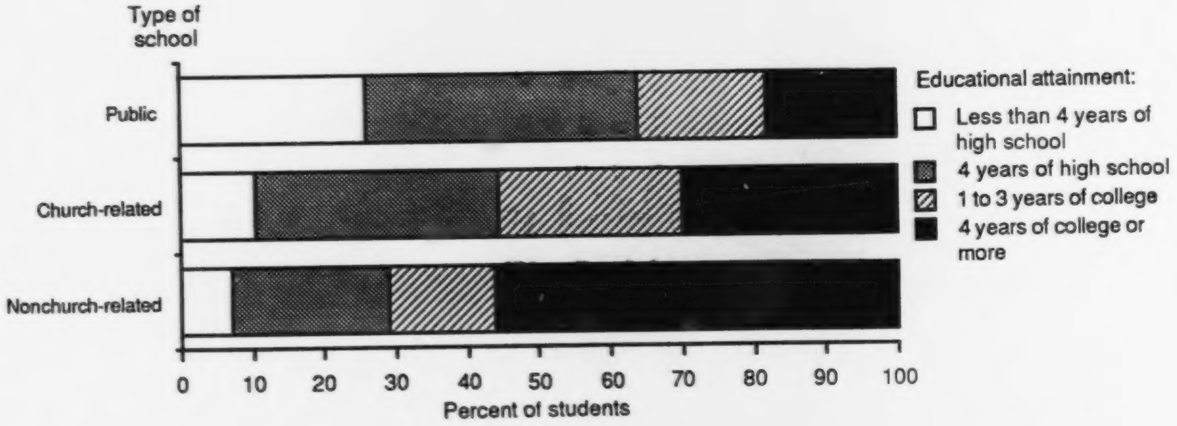
SOURCE: U.S. Department of Commerce, Bureau of the Census, October 1985 School Enrollment Supplement to Current Population Survey, unpublished tabulations.

FIGURE 1 -- Proportion of elementary and secondary students by household income, educational attainment, and control of school: 1985

Family income



"Parental" educational attainment



SOURCE: U.S. Department of Commerce, Bureau of the Census, 1985 October School Enrollment Supplement to the Current Population Survey, unpublished tabulations.

- The proportions of children attending nonchurch-related schools in 1985 were less than 1 percent if family income was less than $25,000, less than 2 percent if family income was between $25,000 and $74,999, and 10 percent if family income was at least $75,000.

- Most private school students at all income levels attend church-related schools, but the likelihood that the private school will be nonchurch-related increases with family income. In 1985 only 10 percent of private school students from families with incomes below $25,000 were enrolled in a nonchurch-related school as compared to 37 percent of those from families with incomes of $75,000 or more.

Bianchi (1982) reported no clear trend during the 1970's toward increasing or decreasing differences between public and private schools in family income levels. The same was also true between 1979 and 1985. The median family income for households containing elementary and secondary school students increased between 1979 and 1985 for students in all types of schools. However, there was little change in the relative levels of family income of public and private schools.[4]

The likelihood that a child will attend a private school also increases with the educational attainment of his or her parents. The differences among types of schools in "parental" educational backgrounds were similar to those for family income in 1985.[5]

- In households where the "parent" had not completed high school, 5 percent of the children in grades 1-12 attended a private school.

- If the "parent" had at least a bachelor's degree, 18 percent of elementary and secondary school students attended a private school.

- The same percentage—56 percent—of students in public and private schools had a "parent" with a moderate amount of education (finished high school but less than a bachelor's degree). The proportion of public school students whose "parent" was not a high school graduate was more than double that for private school students—26 vs. 11 percent.

- The "parent" of 30 percent of the students in church-related schools had at least a bachelor's degree, while 18 percent of public school students had such highly educated "parents."

- The relatively few students attending nonchurch-related private schools came from households with much higher levels of educational attainment than children attending church-related schools (Figure 1). The "parent" of more than half (56 percent) the students in nonchurch-related schools had at least a bachelor's degree.

Race/ethnicity. Black students are much less likely to attend private schools than whites. Hispanic children are more likely than blacks, but less likely than whites, to attend a private school (Figure 2).

- Private school enrollment by black youngsters is low primarily because of low enrollment rates in church-related schools—only 2.4 percent of all black children attended church-related schools in 1985 as compared to 9.8 percent of whites and 6.1 percent of Hispanics.

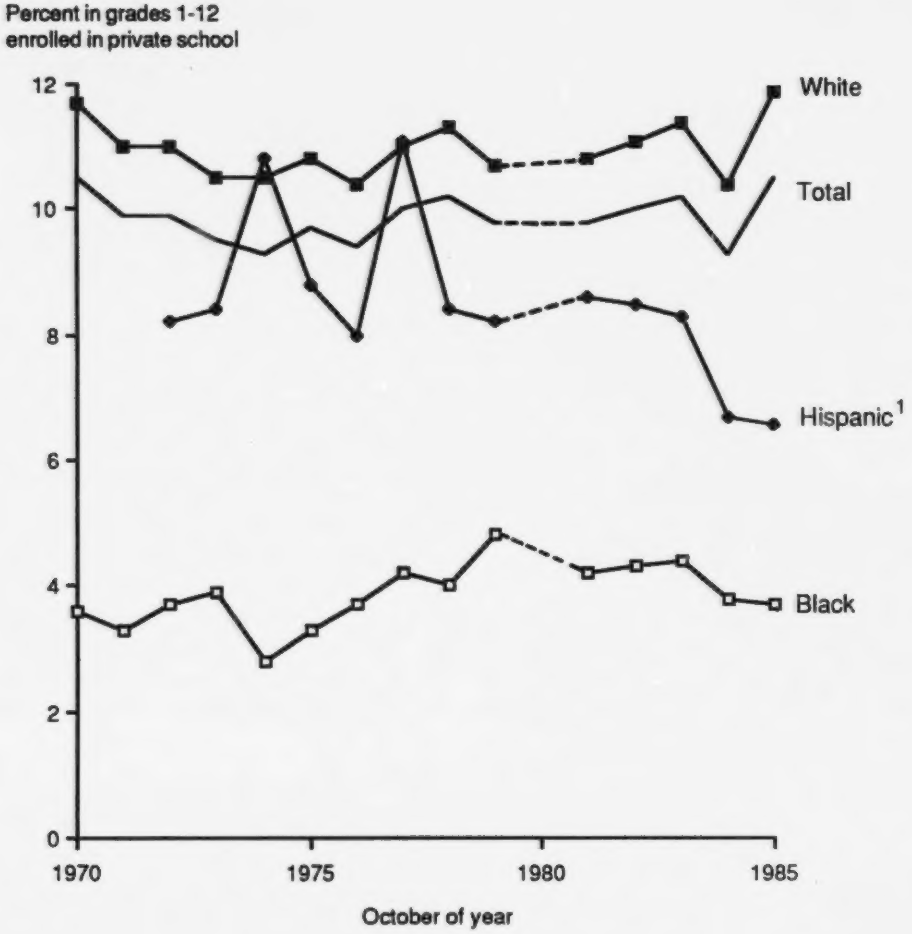
Very few blacks and Hispanics living outside of metropolitan areas attend private schools.

- In 1985, private school enrollment rates were about .5 percent for blacks and 2 percent for Hispanics in nonmetropolitan areas. Approximately 5 percent of blacks living in central cities and in the suburbs attended private schools, while for Hispanic children, private school enrollment rates were between 7 and 8 percent in central cities and the suburbs.

One factor contributing to low private school attendance by blacks and Hispanics is lower family incomes than whites, since private school attendance increases with family income. The differences in private school attendance between whites and Hispanics are largely a function of differing family income levels. Enrollment rates for whites and Hispanics at the same income level did not differ significantly in 1985 (Table 3). However, differences in private school enrollment rates between blacks and whites generally remain.[6]

The number of black students in private schools increased during the late 1970's, and during that period the gap between blacks and whites in private school enrollment rates narrowed. However, according to CPS, the number of black private school students declined by 25 percent between 1979 and 1985. As a

FIGURE 2 -- Private elementary and secondary enrollment as a proportion of total enrollment, by race/ethnicity



1. Hispanics may be of any race.

NOTE: Data for 1980 not available.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Private School Enrollment, Tuition, and Enrollment Trends: October 1979; School Enrollment -- Social and Economic Characteristics of Students: October 1984*; and 1985 October School Enrollment Supplement to the Current Population Survey, unpublished tabulations.

result, the black enrollment rate—and the difference between blacks and whites—was approximately the same in 1985 as in 1970 (Figure 2).

- Between 1970 and 1979, the number of black elementary and secondary students attending private schools increased by over 30 percent (U.S. Department of Commerce, 1985). Black enrollment in Catholic schools increased over 20 percent between 1970 and 1980, while total enrollment in Catholic schools was declining by 30 percent (National Catholic Educational Association, 1986b).

- The decline in black attendance in private schools since 1979 has largely been due to a decline in black enrollment rates in church-related schools—from 4.2 percent of all black students in grades 1 to 12 in 1979 to 2.4 percent in 1985.

- It is unclear in what types of church-related schools black enrollment has declined. Data from the National Catholic Educational Association (NCEA) (1986b) indicate that black enrollment in Catholic schools declined about one percent between 1980-81 and 1984-85. The National Association of Independent Schools (NAIS) (1986) reported a 13 percent increase in black students between 1981-82 and 1985-86.

According to CPS data, there have been no consistent trends over time for Hispanic enrollment in private schools. In part, this reflects the small CPS sample for Hispanics, which results in large standard errors so that even large differences may not be statistically significant. Individual private school associations have reported considerable increases in both Hispanic and Asian enrollments in member schools.

- NCEA (1986b) has reported considerable growth in Hispanic enrollment in Catholic schools since 1970, especially prior to 1980—18 percent between 1970 and 1980 and 3.5 percent between 1980 and 1985.

- NAIS (1986) reported an increase of 7 percent in Hispanic enrollment between 1981 and 1985.

- Both NCEA and NAIS report increased enrollment in member schools by Asian-Americans of approximately 50 percent in the first half of the 1980's.

Blacks represent a smaller proportion of private than of public school students, and that proportion has declined since 1979.

- Approximately 5.5 percent of private school students were black in 1985, as compared to 7.5 percent in 1979. Among public school students, the percentage of black students was slightly less than 17 percent in 1985 and had not changed since 1979.

- The proportion of students in church-related schools who were black decreased from 7.6 to 4.5 percent between 1979 and 1985.

Hispanics constituted 6 percent of private school students in 1985 and 10 percent of public school students.

Tuition Levels

The Bureau of the Census has collected data on private school tuition and fees every 3 years since 1979. The general patterns related to tuition levels were the same in 1979, 1982, and 1985. Tuition is higher in high schools than in elementary schools and in nonchurch-related schools than in church-related schools (Table 4).

- In 1985, tuition for one-third of the elementary students attending church-related schools was under $500 and it was between $500 and $1,000 for another third. Over sixty percent of all students in private elementary schools attended a church-related school where tuition and fees were less than $1,000 in 1985.

- For elementary students in nonchurch-related schools, tuition and fees were less than $1,500 for about one-third of the students and over $3,000 for more than a third.

- At the high school level in 1985, one half of the students in church-related schools attended a school where the tuition and fees were less than $1,500. Tuition and fees exceeded $3,000 for over half the high school students enrolled in nonchurch-related schools.

The Center for Statistics also collects data on private school tuition and compiles the information separately for Catholic and other religiously-affiliated schools.

Table 4

Tuition and fees in private schools, by level and control: October 1985

Level and control of school	Proportion of students[1] with tuition and fees of:					Median tuition and fees	Mean tuition and fees
	Less than $500	$500-$999	$1,000-$1,499	$1,500-$1,999	$2,000- and over		
Elementary[2] (Grades 1–8)	29.8	33.0	19.3	5.7	12.2	$ 774	$1,046
Church-related	33.3	37.0	19.2	5.5	5.0	692	799
Nonchurch-related	6.7	6.4	19.0	7.0	60.6	2,282	2,709
Secondary[2] (Grades 9-12)	2.8	10.1	31.4	25.5	30.2	1,569	2,003
Church-related	2.7	11.3	35.2	27.8	23.1	1,508	1,618
Nonchurch-related	3.0	4.2	12.0	13.3	67.5	3,571	4,042

[1] Percent calculated on total number of students for whom tuition levels were reported. The non-response rate on the tuition item for the categories in the table ranged from 10 to 18 percent. The response rate was higher for nonchurch-related schools than church-related schools.

[2] Includes some students for whom control of the private school was not reported.

NOTE: May not sum to 100 percent due to rounding.
SOURCE: U.S. Department of Commerce, Bureau of the Census, October 1985 School Enrollment Supplement to the Current Population Survey, unpublished tabulations.

Such data were gathered for the 1983-84 and 1985-86 school years, but the 1985-86 data were not yet available when this report went to press. For the 1983-84 school year, tuition in Catholic schools was considerably lower than in other religiously-affiliated schools (U.S. Department of Education, 1986b).

- Median tuition for the 1983-84 school year was approximately 75 percent higher in other religiously-affiliated schools than in Catholic schools.

Tuition and fees in private schools have risen more sharply than the cost-of-living since 1979 according to data from the Current Population Survey. For church-related schools, the increases have been greater in elementary schools than in high schools and greater between 1979 and 1982 than between 1982 and 1985. For nonchurch-related schools, there has been relatively little difference in tuition trends between the two time periods.[7]

- The Consumer Price Index (CPI) increased 48 percent between 1979 and 1985. Median private school tuition and fees increased 103 percent for elementary school students and 69 percent for high school students in that period.[8]

- The increases in church-related tuition and fees between 1979 and 1982 were 74 percent for elementary school students and 37 percent for high school students. The CPI rose 33 percent in that period.

- For the 1982-85 period, tuition and fees for church-related schools increased 22 percent for both elementary and high school pupils. The increase in the cost-of-living was 11 percent between 1982 and 1985.

- Tuition increases for nonchurch-related students were 78 percent for elementary students and over 100 percent for high school students between 1979 and 1985.

- Differences in tuition and fees between students in church- and nonchurch-related high schools increased between 1979 and 1985, due to a much higher rate of increase for students in nonchurch-related schools over the period—over 100 percent compared to 67 percent for students in church-related schools.

Region and metropolitan status. Median tuition levels in private schools vary by region and metropolitan status, and that variation is somewhat different for elementary and secondary school students (Table 5). For students in grades 1-8, median tuition and fees are lower in the Northeast and North Central regions than in the South and West and higher in the suburbs than elsewhere. For high school students, median tuition is higher in the West than in the other regions and lower in nonmetropolitan than in metropolitan areas.

- In 1985 tuition and fees for a much larger proportion of elementary school students were less than $1,000 in the Northeast (74 percent) and the North Central (80 percent) regions than in the South (44 percent) and West (46 percent).

- The regional differences may reflect in part differences in enrollment patterns. Higher proportions of students in the Northeast and North Central regions attend Catholic elementary schools, which tend to have lower tuitions.

- At the high school level, very few students attend private schools where the tuition is less than $1,000 and there is little regional variation in this pattern—from 10 percent in the West to 15 percent in the North Central region. However, there are regional differences in the proportion of students for whom tuition is very high, $3,000 or more—from 21 percent in the Northeast to 4 percent in the North Central region in 1985.

- There is considerable variation in high school tuition levels by metropolitan status. Thirty-eight percent of students in nonmetropolitan areas pay private school tuition and fees of less than $1,000 as opposed to only 6 percent in the suburbs and 9 percent living in central cities.

Race/ethnicity. For elementary pupils attending private schools, blacks have tended in recent years to pay somewhat more in tuition and fees than have whites (Figure 3).

- In 1982 and 1985 the proportion of black pupils for whom tuition and fees were less than $500 was considerably below that for whites (and Hispanics in 1982). This was true for all private elementary schools and for church-related elementary schools.[9]

- In 1985, tuition and fees exceeded $1,000 for over half (53 percent) of the black private school elementary students, but only 36 per-

Table 5

Median private school tuition and fees, by level, control, region, and metropolitan status: 1985

Region and metropolitan status	Median tuition and fees					
	Elementary students (Grades 1–8)			Secondary students (Grades 9–12)		
	Total[1]	Church-related	Nonchurch-related	Total[1]	Church-related	Nonchurch-related
U.S.	$ 774	$692	$2,282	$1,569	$1,508	$3,571
Region:						
Northeast	573	515	3,581	1,617	1,522	—
North Central	561	545	—	1,523	1,509	—
South	1,074	978	1,627	1,451	1,315	—
West	1,034	978	—	2,014	1,861	—
Metropolitan status:						
Central city	737	671	2,803	1,566	1,528	—
Suburb	834	748	2,803	1,700	1,591	5,211
Nonmetropolitan	679	620	—	1,079	1,043	—

—Cell size too small (less than 75,000) for a reliable estimate.

[1] Includes some students for whom control of the private school was not reported.

SOURCE: U.S. Department of Commerce, Bureau of the Census, October 1985 School Enrollment Supplement to the Current Population Survey, unpublished tabulations.

cent of white students and 24 percent of Hispanic students.

- In elementary schools, families of white and Hispanic students paid about the same tuition and fees in 1985.

Two factors that may help explain the racial/ethnic patterns are tuition policies in Catholic schools and the way that CPS collects data on tuition.

- Blacks attending Catholic schools tend to be nonCatholics, which is not the case for Hispanics or whites (National Catholic Educational Association, 1986b). Parish schools often charge higher tuition to nonparishioners, so blacks attending such schools would tend to pay higher tuition than whites and Hispanics.

- Instructions to CPS interviewers for the tuition item on the October Supplement are that information on tuition and fees should exclude scholarships or subsidies. Therefore, the CPS tuition figures may overstate the net cost to a family of sending their child to a private school. If black children are more likely to receive scholarships or some other form of subsidy than other students, then the tuition differentials between blacks and others would be reduced if scholarships were taken into account.

Family income. The level of tuition a family pays to send a child to private school varies with family income, but the relationship between income and tuition levels has not been particularly strong in the 1980's. Income may have a larger impact on whether a child attends private school than on how much tuition the family pays when the child does attend. The 1982 and 1985 CPS surveys used the same income and tuition categories, and in both cases, the general pattern is similar (Table 6).

- There is not much difference across income categories in the distribution of tuition levels, except for the highest income categories—$50,000 or more.

- One possible explanation for the lack of greater variation across income levels is the fact that CPS data reflect gross and not net costs to the family of sending the child to private school. If lower-income families are more likely to receive scholarships or other subsidies, then the differential between gross costs and net costs may be greater for lower-income families. If data were available on net costs—out-of-pocket costs, the relationship between family income and tuition levels might be stronger.

- In 1982 and 1985, families with incomes above $50,000 were more likely to send their child to a private school where tuition and fees exceeded $2,000, at both the elementary and secondary school levels. As noted earlier, relatively few private school students—less than one-fourth—come from such high-income families.

Implications

The trends in private school enrollments and tuitions presented above have a variety of implications both for private schools and for American education in general. The implications for private schools are discussed below, followed by the more general implications.

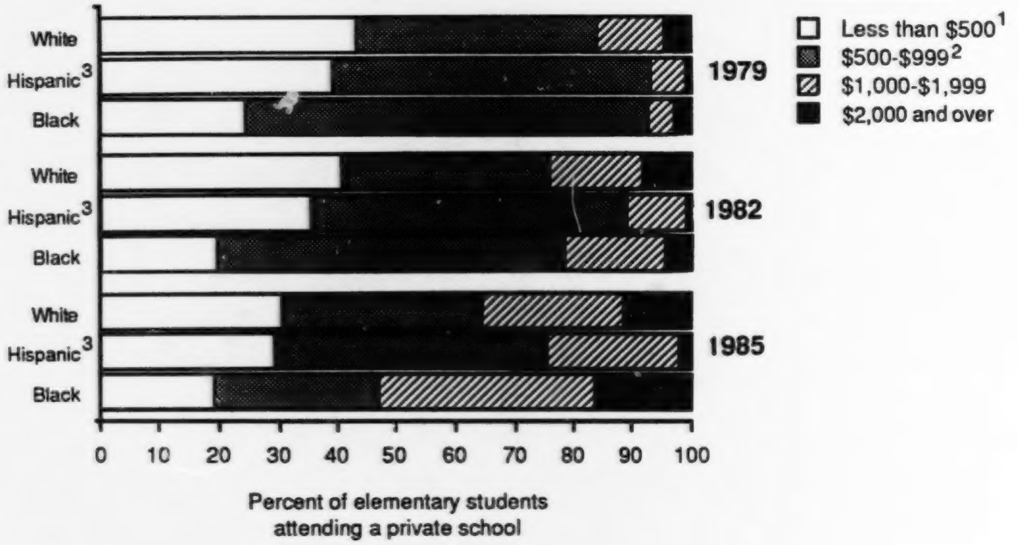
Private school implications

A major theme that can be seen in the recent enrollment trends for private schools is their continued, and in some respects increasing, diversity. For example:

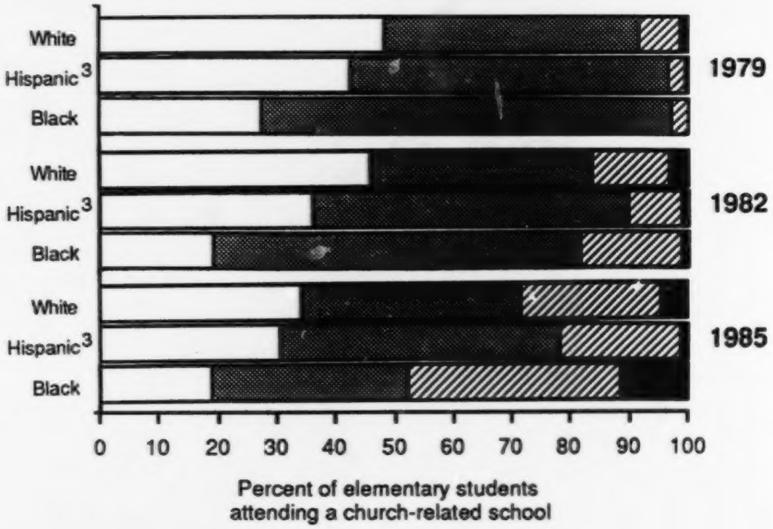
- The proportion of students attending non-Catholic religiously-affiliated schools has been increasing, while the proportion attending Catholic schools, which have historically accounted for a very large majority of all students in church-related schools, has been declining. In 1983, approximately equal proportions of private schools were Catholic, other religiously-affiliated, and nonaffiliated (U.S. Department of Education, 1986a).

- The students attending private schools come from a variety of family backgrounds, particularly those attending church-related schools. The majority of private school students come from middle-income families.

FIGURE 3 -- **Tuition and fees in private elementary schools, by race/ethnicity and control: 1985**



All elementary students in private schools



Elementary students in church-related schools

1. Less than $300 for 1979.
2. $300 to $999 for 1979.
3. Hispanics may be of any race.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Private School Enrollment, Tuition, and Enrollment Trends: October 1979* and October 1982 and 1985 School Enrollment Supplements to the Current Population Survey, unpublished tabulations.

Table 6

Tuition and fees in private schools by level and family income: 1982 and 1985

Family income	Proportion of students[1] with tuition and fees of:					
	Elementary students (Grades 1–8)			Secondary students (Grades 9–12)		
	Less than $1,000	$1,000-$1,999	$2,000 and over	Less than $1,000	$1,000-$1,999	$2,000 and over
1985:						
Less than $7,500	78.2	18.5	3.4	24.1	60.2	15.7
$7,500 to $14,999	74.1	20.2	5.8			
$15,000 to $24,999	69.3	26.2	4.5	24.1	59.4	16.5
$25,000 to $34,999	65.5	27.3	7.3	11.9	63.9	24.2
$35,000 to $49,999	62.8	28.2	9.0	11.4	63.6	25.0
$50,000 to $74,999	58.2	23.9	18.1	7.1	56.5	36.3
$75,000 and over	29.5	20.8	49.8	1.8	32.5	65.8
1982:						
Less than $7,500	85.7	11.9	2.4	44.0	48.6	7.3
$7,500 to $14,999	81.9	16.4	1.8			
$15,000 to $24,999	81.0	15.3	3.7	27.7	61.9	10.4
$25,000 to $34,999	80.5	14.7	4.8	29.3	55.0	15.7
$35,000 to $49,999	75.4	14.6	9.9	29.8	52.8	17.4
$50,000 to $74,999	55.4	19.5	25.1	12.1	54.8	33.2
$75,000 and over	28.7	31.8	39.5			

[1] Percentage calculated on total number of students for whom tuition levels were reported. The nonresponse rate on the tuition item by income category ranged from 7 to 27 percent in 1985 (16 percent for elementary students and 13 percent for secondary students) and 4 to 26 percent in 1982 (11 percent for elementary students and 13 percent for secondary students).

NOTE: May not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, October 1985 and October 1982 School Enrollment Supplements to the Current Population Survey, unpublished tabulations.

- Some of the convergence in private school attendance rates that occurred in the 1970's, particularly among regions, has not continued into the 1980's. Children still are more likely to attend a private school if they live in the Northeast and North Central regions.

- However, the differences between central cities vs. suburbs and rural areas in the likelihood that a child will attend a private school have been narrowing. The decreases in private school attendance rates in the large cities and the increases elsewhere may be a reflection of the first trend mentioned above, the declining percentage of private school students in Catholic schools and the increasing proportion in other religiously-affiliated schools.

- One area in which diversity has not increased in recent years according to CPS data is the racial/ethnic backgrounds of private school students. In particular, private school enrollment rates for black students have declined since 1979, reversing the trends of the 1970's. Hispanic private school attendance patterns have not changed significantly in recent years.

Tuition levels for private schools increased considerably faster than the cost-of-living between 1979 and 1985, especially for church-related schools. It is unclear whether the tuition increases affected enrollment trends during this period.

- On the one hand, total enrollment in private schools was stable while public school enrollment was declining.

- On the other hand, black enrollment decreased, particularly in church-related schools, where the tuition increases were proportionately the greatest. The ratio of median family income for black private school students to black public school students increased from 1.95 in 1979 to 2.06 in 1985, which suggests an increasing differential in family income between black students in public and private schools.

- Other studies have shown that tuition levels do affect family choice of a school, and that the enrollment decisions of minority and lower-income families are more sensitive to tuition levels than white and higher-income families (Williams, Hancher, & Hutner, 1983; Noell, 1984).

Implications for American education

The proportion of all elementary and secondary students attending private schools has risen slightly in recent years, and was approximately 11 percent in 1985 according to data collected by the Bureau of the Census. The trends in private school enrollments revealed in CPS data suggest stability in the relative sizes of the two sectors of American elementary and secondary education—public and private.

- The fears of some observers in the 1970's of continued substantial declines in private school enrollments were not realized.

- Similarly, the perception, held by many, that private schools are expanding rapidly in the 1980's and absorbing large numbers of students from public schools is not confirmed by the national data on enrollment trends from CPS (Catterall, 1985).

- However, given the estimates of private school enrollment by the Center for Statistics, it is possible that the CPS survey misses substantial numbers of private school students. Furthermore, the national and regional figures could mask considerable variation across States and localities in the relative sizes of the public and private school sectors, and how they are changing.

Footnotes

[1] Private school enrollment rates are the proportions of particular population groups enrolled in private schools. Thus, the elementary private school enrollment rate for blacks would be the proportion of all black students in grades 1 to 8 attending a private school.

[2] Another estimate of private school enrollment was derived in the early 1980's using a combination of data sources—data from private school associations, and a comparison of the CS list of private schools in 21 areas with the number of private schools actually found by a canvas of those areas (Cooper & McLaughlin, 1983; Cooper, McLaughlin, & Manno, 1983; Cooper, 1985). The resulting estimates of total private school enrollment are also considerably higher than those from CPS—5.3 million for 1982-83 in K-12 (Cooper, 1985) as opposed to CPS's figure of 4.1 million in October 1982.

[3] Private school enrollment trends relative to public schools vary according to the data source consulted. The decennial census and the Current Population Survey showed private school enrollment declining more rapidly than public school enrollment during the 1970's, so that the percentage of students attending private schools also declined. Center for Statistics data showed private school enrollment declining less rapidly, and an increase in the proportion of private school enrollment (Williams et al., 1983).

[4] Using CPS data, Bianchi (1982) analyzed family income differences between public and private school students in two ways. She computed the ratio of median family incomes of public and private school students. She also calculated an index of dissimilarity between the income distributions of the two sectors, which provides a measure of what proportion of all students in public schools would have to come from higher income families if the family income distributions for public and private school students were to be the same. The income ratios varied erratically between .69 and .81 for elementary schools and .71 and .76 for high schools between 1970 and 1979.

The same measures were used to analyze changes in the relative family income distributions since 1979, and the results are shown below.

	School level			
	Elementary		Secondary	
Year	Ratio of public to private school median family income	Index of income dissimilarity between public and private schools	Ratio of public to private school median family income	Index of income dissimilarity between public and private schools
1979	.71	23%	.73	23%
1982	.70	21%	.70	23%
1985	.68	24%	.67	25%

[5] In tabulations prepared by the Bureau of the Census from the Current Population Survey, educational attainment is reported for the adult identified as the "householder" or "reference person," and only for children who are a relative of that person. In order to reduce the awkwardness of referring to such individuals as reference persons or householders, they are referred to in the text as "parents." In most cases, this individual is the child's parent.

Other characteristics increasing the likelihood of enrollment in private schools, based on data from the 1982 CPS survey, include fewer children in the household, "parents" in white collar occupations, and the presence of both spouses in the household (U.S. Department of Education, 1984a).

[6] Noell (1984) reports different patterns in the 1982 CPS data. Enrollment rates for blacks and Hispanics were higher than those of whites at upper income levels. However, in several cases these findings are based on a very small number of cases, so the estimates are not reliable. Furthermore, similar patterns did not appear in the 1979 data.

[7] The results presented in the text are based on changes in median tuition and fees. However, the same analysis was also conducted for mean tuition levels and the results were very similar. The percentage increases in median and mean tuition and fees in the two time periods—1979-1982 and 1982-1985—differed by no more than 3 percent except for elementary school students attending church-related schools for the 1979-82 period, where the increase was much larger for median tuition and fees (74 percent) than for the mean (58 percent).

[8] Over the entire period, 1979-1985, median family income increased 42 percent and public school expenditures per pupil increased by 62 percent.

For Catholic schools, the proportion of revenues coming from tuition and fees has been increasing as have operating expenses and the proportion of lay teachers (National Catholic Educational Association, 1986a, 1986b and 1986c), and all these may be contributing factors to increased tuition levels in Catholic schools. For Catholic high schools, average expenditures per pupil increased 12 percent between 1982-83 and 1985-86 and average tuition increased 34 percent in the same period (National Catholic Educational Association, 1986a).

[9] The analysis for tuition levels by race/ethnicity is limited to elementary school students, because the numbers of black and Hispanic secondary students in private schools are too small to produce reliable estimates of tuition levels for these groups. For the same reason, estimates for tuition in nonchurch-related elementary schools are not presented by race/ethnicity.

Appendix

The Center for Statistics, U.S. Department of Education and the Bureau of the Census both collect national data on private school enrollment and tuition. The methods used by the two agencies are somewhat different.

Center for Statistics

The Center for Statistics (CS) gathers data from private schools through its Private School Survey. The three most recent surveys were in 1980, 1983, and 1985. The data for 1985 were not yet available when this report went to press and the methodology utilized for 1980 and 1983 were not comparable.

The CS survey gathers data from schools, and until the 1983 survey, it was a universe rather than a sample survey. There was some concern that the lists of private schools which constituted the universe for the earlier surveys were not complete. Therefore, in order to increase the representativeness of the survey, two sampling frames were utilized in 1983—a list frame and an area frame.

An eligible school for the purposes of the CS surveys must meet three criteria: it includes a first grade or above; it is housed in a facility other than a private home; and it provides 4 or more hours of instruction per day for at least 160 days a year. Schools which only serve children below the first grade are excluded. As a result, CS underestimates the number of children attending private schools for nursery school and kindergarten, especially the former.

The Private School Surveys collect many types of institutional data about private schools, but are not designed to collect information about the characteristics of private school students. CS gathers data about teachers, programs, and school characteristics.

Bureau of the Census

The Current Population Survey (CPS) is a sample survey of households conducted monthly, with a core of questions asked every month and other questions asked less frequently. The survey covers approximately 60,000 households each month, which contain about 150,000 individuals. The October CPS asks household informants about school enrollment and educational attainment of household members. Each October questions are asked about the current enrollment status of household members 3 years of age or older. For those enrolled in 12th grade and below, the question is asked whether the school attended is a public or private school. Additional items in the 1979, 1982, and 1985 surveys asked about the amount of tuition and fees paid in behalf of private school students and whether the private school was church-related or not.

Because the CPS is a household survey, it provides information about the characteristics of private school students and their families, such as race, educational attainment, and income. However, except for the limited questions on control and tuition added every 3 years since 1979, it does not provide data about the private schools children are attending. The specific questions on the October CPS are the following:

> Is (the child) enrolled in public or private school?
> What grade or year is (the child) attending?

If the school is identified as private, these additional questions were asked in 1979, 1982 and 1985:

> Is the school (the child) attends church related or not church related?
> What is the amount of tuition and fees for this school year at the school (the child) is attending? (Include only fees required for school entry; exclude room and board, books, uniforms, school supplies, and lunches.)

Reliability of Estimates

All comparisons cited in the text are statistically significant at the 0.05 level of significance. This means that the difference between two sample estimates is greater than 1.96 times the standard error of the difference.

Table A1

Standard errors for Table 1: Private school enrollment trends: 1970 to 1985

October of year	K-12 enrollment (In thousands)			Private school enrollment as a percentage of total K-12 enrollment
	Total	Public	Private	
1970	245	240	104	0.2
1971	245	241	102	0.2
1972	244	239	100	0.2
1973	243	239	98	0.2
1974	243	239	97	0.2
1975	243	238	98	0.2
1976	243	238	96	0.2
1977	242	237	98	0.2
1978	241	235	98	0.2
1979	240	234	95	0.2
1980	239	—	—	—
1981	257	251	102	0.2
1982	256	249	102	0.2
1983	256	249	104	0.2
1984	255	249	98	0.2
1985	256	249	104	0.2

—Not available.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *School Enrollment—Social and Economic Characteristics of Students: October 1984* (Current Population Reports, Series P–20, No. 404), 1985 and unpublished tabulations.

Table A2

Standard errors for Table 2: Proportion of all students attending private schools, by region and metropolitan status

Metropolitan status and region	Standard errors in percent (population size in thousands) for proportion of October enrollment, grades 1–12, attending private schools			
	1970	1979	1982	1985
U.S.	0.2 (48,665)	0.2 (42,981)	0.2 (41,534)	0.2 (40,845)
Region:				
Northeast	0.5 (10,877)	0.5 (9,734)	0.6 (8,774)	0.6 (8,224)
North Central	0.4 (14,000)	0.4 (11,198)	0.5 (10,743)	0.5 (10,365)
South	0.3 (15,083)	0.3 (14,482)	0.3 (13,782)	0.3 (14,218)
West	0.4 (8,337)	0.4 (7,567)	0.5 (8,235)	0.5 (8,038)
Metropolitan status				
Central city	0.5 (12,588)	0.5 (11,106)	0.5 (10,969)	0.5 (10,115)
Suburb	0.3 (17,905)	0.3 (17,329)	0.4 (16,599)	0.4 (16,885)
Nonmetrpolitan	0.2 (18,172)	0.3 (14,546)	0.3 (13,966)	0.3 (13,845)

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Private School Enrollment, Tuition, and Enrollment Trends: October 1979* (Current Population Reports, Series P–23, No. 121), 1982 and unpublished tabulations; Bianchi, S., Private School Enrollment: Trends and Debates, *Research in Sociology of Education and Socialization*, *3*, 1982.

Table A3

Standard errors for Table 3: Enrollment rates in private elementary and secondary schools by race/ethnicity, family income, and control of school: October 1985

Family income	Standard errors in percent (population size in thousands) for the proportion of children attending private schools							
	All children				White			
	Total enrolled	Total private[1]	Church-related	Nonchurch-related	Total enrolled	Total private[1]	Church-related	Nonchurch-related
Total[2]	(40,206)	0.2	0.2	0.1	(32,482)	0.3	0.3	0.1
Less than $7,500	(5,713)	0.4	0.3	0.1	(3,228)	0.6	0.5	0.2
$7,500 to $14,999	(6,339)	0.4	0.4	0.1	(4,651)	0.6	0.5	0.2
$15,000 to $24,999	(8,470)	0.5	0.4	0.1	(6,955)	0.5	0.5	0.2
$25,000 to $34,999	(7,410)	0.6	0.6	0.2	(6,619)	0.6	0.6	0.2
$35,000 to $49,999	(6,274)	0.7	0.6	0.2	(5,572)	0.7	0.7	0.3
$50,000 and over	(4,568)	0.9	0.8	0.5	(4,221)	0.9	0.8	0.5

Family income	Black				Hispanic[3]			
	Total enrolled	Total private[1]	Church-related	Nonchurch-related	Total enrolled	Total private[1]	Church-related	Nonchurch-related
Total[2]	(6,325)	0.4	0.3	0.2	(3,908)	0.6	0.6	0.1
Less than $7,500	(2,253)	0.4	0.3	0.2	(1,026)	0.9	0.8	0.4
$7,500 to $14,999	(1,441)	0.7	0.6	0.2	(1,047)	1.1	1.1	—
$15,000 to $24,999	(1,262)	0.9	0.7	0.4	(889)	1.5	1.4	0.2
$25,000 to $34,999	(590)	1.8	1.6	0.6	(503)	2.2	2.1	0.7
$35,000 to $49,999	(473)	1.9	1.5	1.0	(218)	3.7	3.7	—
$50,000 and over	(150)	4.7	3.8	2.8	(124)	5.8	5.8	—

— Not available.

[1] Includes some students for whom control of the private school was not reported.

[2] Includes some students for whom income was not reported.

[3] Hispanics may be of any race.

SOURCE: U.S. Department of Commerce, Bureau of the Census, October 1985 Supplement to Current Population Survey, unpublished tabulations.

Table A4

Standard errors for Table 4: Tuition and fees in private schools, by level and control: October 1985

Level and control of school	Total enrolled[1] (in thousands)	Standard errors						
		Proportion of students[1] with tuition and fees of:					Median tuition and fees	Mean tuition and fees
		Less than $500	$500-$999	$1,000-$1,499	$1,500-$1,999	$2,000- and over		
Elementary[2] (Grades 1–8)	2,543	1.5	1.5	1.3	0.8	1.1	$ 25	$ 36
Church-related	2,211	1.6	1.7	1.4	0.8	0.8	23	22
Nonchurch-related	326	2.3	2.2	3.6	2.3	4.4	212	179
Secondary[2] (Grades 9–12)	1,026	0.8	1.4	2.2	2.1	2.2	32	87
Church-related	859	0.8	1.6	2.5	2.3	2.2	42	56
Nonchurch-related	166	2.0	2.2	3.8	4.0	5.6	852	355

[1] Based on total number of students for whom tuition levels were reported. The nonresponse rate on the tuition item for the categories in the table ranged from 10 to 18 percent. The response rate was higher for nonchurch-related schools than church-related schools.

[2] Includes some students for whom control of private school was not reported.

SOURCE: U.S. Department of Commerce, Bureau of the Census, October 1985 Supplement to the Current Population Survey, unpublished tabulations.

Table A5

Standard errors for Table 5: Median private school tuition and fees, by level, control, region, and metropolitan status: 1985

Region and metropolitan status	Standard errors (population size in thousands) for median tuition and fees											
	Elementary students (Grades 1–8)						Secondary students (Grades 9–12)					
	Total[1]		Church-related		Nonchurch-related		Total[1]		Church-related		Nonchurch-related	
U.S.	$25	(2,543)	$23	(2,211)	$212	(326)	$32	(1,026)	$42	(859)	$852	(166)
Region:												
Northeast	26	(655)	25	(565)	500	(921)	58	(350)	61	(280)	—	(70)
North Central	35	(754)	34	(724)	—	(34)	75	(284)	73	(271)	—	(13)
South	37	(701)	43	(559)	257	(139)	98	(242)	67	(183)	—	(59)
West	31	(430)	45	(365)	—	(66)	128	(150)	227	(123)	—	(27)
Metropolitan status:												
Central city	42	(805)	35	(721)	436	(82)	56	(364)	55	(321)	—	(43)
Suburb	30	(1,234)	35	(1,056)	244	(176)	83	(486)	55	(392)	1,002	(96)
Nonmetropolitan	61	(505)	48	(436)	—	(68)	113	(176)	62	(147)	—	(30)

—Not available.

[1] Includes some students for whom control of the private school was not reported.

SOURCE: U.S. Department of Commerce, Bureau of the Census, October 1985 School Enrollment Supplement to the Current Population Survey, unpublished tabulations.

Table A6

Standard errors for Table 6: Tuition and fees in private schools by level and family income: 1982 and 1985

Family income	Standard errors in percent (population size in thousands) for proportion of students[1] with tuition and fees of:							
	Elementary students (Grades 1–8)				Secondary students (Grades 9–12)			
	Total number[1]	Less than $1,000	$1,000-$1,999	$2,000 and over	Total number[1]	Less than $1,000	$1,000-$1,999	$2,000 and over
1985:								
Less than $7,500	(119)	6.2	5.8	2.7	(83)	7.1	8.2	6.1
$7,500 to $14,999	(243)	4.6	4.2	2.5				
$15,000 to $24,999	(446)	3.6	3.4	1.6	(133)	5.6	6.5	4.9
$25,000 to $34,999	(634)	3.1	2.9	1.7	(194)	3.5	5.2	4.7
$35,000 to $49,999	(522)	3.5	3.2	2.1	(264)	3.0	4.5	4.1
$50,000 to $74,999	(306)	4.6	4.0	3.6	(168)	3.0	5.8	5.6
$75,000 and over	(207)	5.2	4.6	5.7	(114)	1.9	6.7	6.8
1982:								
Less than $7,500	(126)	5.1	4.7	2.2	(109)	7.2	7.3	3.8
$7,500 to $14,999	(342)	3.4	3.3	1.2				
$15,000 to $24,999	(679)	2.5	2.3	1.2	(202)	4.8	5.2	3.3
$25,000 to $34,999	(647)	2.6	2.3	1.4	(229)	4.6	5.0	3.7
$35,000 to $49,999	(403)	3.5	2.9	2.4	(161)	5.5	6.0	4.5
$50,000 to $74,999	(195)	5.8	4.7	5.1	(199)	3.5	5.4	5.1
$75,000 and over	(129)	6.5	6.7	7.1				

[1] Based on total number of students for whom tuition levels were reported. The nonresponse rate on the tuition item by income category ranged from 7 to 27 percent in 1985 (16 percent for elementary students and 13 percent for secondary students) and 4 to 26 percent in 1982 (11 percent for elementary students and 13 percent for secondary students).

NOTE: May not sum to 100 percent due to rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, October 1985 and October 1982 School Enrollment Supplements to the Current Population Survey, unpublished tabulations.

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A. Supplementary Tables

Table A1

Average reading performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1971 to 1984

	Reading proficiency means			
9-year-olds	1971	1975	1980	1984
Total	207.2	209.6	213.5	213.2
Sex				
Male	201.2	204.2	208.5	210.0
Female	213.3	215.1	218.5	216.3
Observed ethnicity/race				
White[1]	214.4	215.9	219.7	220.1
Black	169.3	181.9	188.9	188.4
Hispanic	—	[2]182.9	[2]189.1	[2]193.0
Region				
Northeast	—	214.2	219.6	217.1
Southeast	—	200.8	208.9	207.2
Central	—	215.1	215.1	217.2
West	—	206.5	211.0	211.4
Parental education				
Not graduated high school	188.6	189.9	193.0	197.1
Graduated high school	209.0	211.2	211.7	211.4
Post high school	224.7	221.1	224.9	224.3
Size/type of community				
Rural	[2]200.7	[2]204.0	[2]210.3	[2]205.8
Disadvantaged urban	177.8	185.1	186.0	194.4
Advantaged urban	231.3	226.2	[2]231.9	231.4
Reading materials in the home				
0–2 items	188.6	195.8	199.3	201.0
3 items	208.0	211.5	214.7	217.3
4 items	220.2	222.2	224.6	225.9
Television watched per day				
0–2 hours	—	—	217.4	219.6
3–5 hours	—	—	220.0	219.8
6 hours or more	—	—	208.8	202.2
13-year-olds	1971	1975	1980	1984
Total	253.9	254.8	257.4	257.8
Sex				
Male	247.9	248.4	252.8	253.5
Female	259.9	261.2	261.8	262.3
Observed ethnicity/race				
White[1]	260.1	260.9	263.1	263.4
Black	220.3	224.4	231.9	236.8
Hispanic	—	[2]231.1	[2]236.0	[2]239.2
Region				
Northeast	—	257.6	258.9	261.0
Southeast	—	248.2	251.9	257.0
Central	—	260.3	263.4	259.3
West	—	252.0	254.9	254.5
Parental education				
Not graduated high school	236.2	237.5	237.4	241.5
Graduated high school	255.4	253.4	252.8	253.8
Post high school	269.7	268.9	269.7	268.4

Average reading performance of 9-, 13-, and 17-year-old students by selected characteristics, continued

	Reading proficiency means			
13-year-olds, continued	1971	1975	1980	1984
Size/type of community				
Rural	[2]245.0	[2]247.9	[2]254.3	[2]255.5
Disadvantaged urban	[2]232.4	[2]229.1	[2]241.6	[2]239.6
Advantaged urban	[2]272.4	[2]271.5	[2]275.2	[2]274.7
Reading materials in the home				
0–2 items	227.7	232.9	239.2	241.2
3 items	248.7	248.7	253.0	255.8
4 items	263.9	265.3	265.4	265.5
Television watched per day				
0–2 hours	—	—	261.3	266.8
3–5 hours	—	—	256.4	261.9
6 hours or more	—	—	243.8	246.2
Time spent on homework				
None was assigned —	—	—	253.3	255.4
Did not do it	—	—	250.7	247.9
Less than 1 hour	—	—	258.4	260.9
1 to 2 hours	—	—	262.5	265.3
More than 2 hours	—	—	259.4	262.8
17-year-olds	1971	1975	1980	1984
Total	284.3	284.5	284.5	288.2
Sex				
Male	278.1	279.2	281.1	283.4
Female	290.3	289.6	287.9	293.1
Observed ethnicity/race				
White[1]	290.4	290.7	291.0	294.6
Black	240.6	244.0	246.1	263.5
Hispanic	—	[2]254.7	[2]261.7	[2]268.7
Region				
Northeast	—	287.4	284.0	290.8
Southeast	—	276.7	280.3	284.3
Central	—	290.0	287.2	289.2
West	—	281.1	285.1	288.7
Parental education				
Not graduated high school	263.4	264.1	263.2	269.5
Graduated high school	282.9	280.6	276.9	280.6
Post high school	300.9	297.7	296.5	300.0
Size/type of community				
Rural	[2]275.8	[2]281.3	[2]278.1	[2]282.8
Disadvantaged urban	[2]259.4	[2]261.0	[2]258.3	[2]265.9
Advantaged urban	[2]303.5	301.2	[2]299.1	300.8
Reading materials in the home				
0–2 items	252.3	257.2	264.5	266.7
3 items	274.9	276.2	279.4	283.4
4 items	292.4	292.6	291.3	294.7
Television watched per day				
0–2 hours	—	—	288.2	295.3
3–5 hours	—	—	278.2	284.4
6 hours or more	—	—	263.7	270.1

Average reading performance of 9-, 13-, and 17-year-old students by selected characteristics, continued

	Reading proficiency means			
17-year-olds, continued	1971	1975	1980	1984
Time spent on homework				
None was assigned	—	—	277.1	278.0
Did not do it	—	—	286.5	287.8
Less than 1 hour	—	—	287.2	289.1
1 to 2 hours	—	—	288.3	293.3
More than 2 hours	—	—	292.2	299.0

—Not available.

[1] Includes Hispanic in 1971.

[2] Interpret with caution. Standard errors are poorly estimated due to small sample size.

SOURCE: National Assessment of Educational Progress, *The Reading Report Card, Progress Toward Excellence in Our Schools (Report 15-R-01)*, 1985.

Table A2

Average science performance of 9-, 13-, and 17-year-old students,* by selected characteristics: 1970 to 1982

	Average percentage of correct responses and percentage point change								
9-year-olds[1]	1970	1973	Change	1973	1977	Change			
Total	61.0	59.8	−1.2	52.3	52.2	−0.1			
Sex									
Male	62.1	60.8	−1.3	53.6	53.5	−0.1			
Female	59.9	58.8	−1.1	51.0	50.8	−0.2			
Race									
White	64.0	62.8	−1.2	55.0	54.6	−0.4			
Black	46.8	46.2	−0.6	39.8	39.4	−0.4			
Region									
Northeast	63.6	61.6	−2.0	53.6	54.3	0.7			
Southeast	55.2	55.5	0.3	48.5	48.0	−0.5			
Central	62.7	61.4	−1.3	53.9	53.3	−0.6			
West	61.4	60.1	−1.3	52.7	52.6	−0.1			
Parental education									
Not graduated high school	54.1	54.6	0.5	47.1	45.8	−1.3			
Graduated high school	61.5	60.5	−1.0	53.0	53.3	0.3			
Post high school	66.9	65.2	−1.7	57.5	56.7	−0.8			
Size and type of community									
Rural	57.3	57.2	−0.1	52.2	52.3	0.1			
Disadvantaged urban	45.8	46.4	0.6	50.1	52.9	2.8			
Advantaged urban	69.1	66.4	−2.7	40.3	41.0	0.7			
Main big city	57.4	56.3	−1.1	58.0	59.5	1.5			
Urban fringe	65.1	62.6	−2.5	48.7	47.6	−1.1			
Medium city	62.2	61.1	−1.1	54.8	56.4	1.6			
Small places	60.9	59.8	−1.1	54.8	51.5	−3.3			
13-year-olds	1970	1973	Change	1973	1977	Change	1977	1982	Change
Total	60.2	58.5	−1.7	54.5	53.8	−0.7	52.8	52.4	−0.4
Sex									
Male	62.2	60.6	−1.7	56.3	56.1	−0.2	54.4	54.7	0.3
Female	58.3	56.4	−1.9	52.7	51.6	−1.1	51.2	50.2	−1.0
Race									
White	63.3	61.8	−1.5	57.2	56.4	−0.8	—	—	—
Black	45.0	41.9	−3.1	41.1	42.0	0.9	—	—	—
Region									
Northeast	62.3	60.5	−1.8	56.0	55.9	−0.1	55.0	53.3	−1.7
Southeast	55.8	55.3	−0.5	51.8	51.1	−0.7	49.6	49.0	−0.6
Central	62.4	60.3	−2.1	56.0	55.4	−0.6	54.4	54.1	−0.3
West	60.0	57.7	−2.3	54.1	52.4	−1.7	51.8	52.5	0.7
Parental education									
Not graduated high school	52.8	51.4	−1.4	48.6	47.6	−1.0	—	—	—
Graduated high school	58.9	58.2	−0.7	54.3	53.2	−1.1	—	—	—
Post high school	66.2	64.8	−1.4	59.7	58.7	−1.0	—	—	—
Size and type of community									
Rural	55.9	56.5	0.6	55.1	54.0	−1.1	—	—	—
Disadvantaged urban	48.3	45.4	−2.9	52.6	53.4	0.8	—	—	—
Advantaged urban	66.6	65.3	−1.3	43.8	42.2	−1.6	—	—	—
Main big city	56.7	54.7	−2.0	59.9	59.4	−0.5	—	—	—
Urban fringe	63.3	60.5	−2.8	51.4	50.6	−0.8	—	—	—
Medium city	61.0	58.8	−2.2	56.0	56.3	0.3	—	—	—
Small places	60.2	58.6	−1.6	54.6	53.7	−0.9	—	—	—

Table A2

Average science performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1970 to 1982, continued

	Reading proficiency means								
	Average percentage of correct responses and percentage point change								
17-year-olds	1970	1973	Change	1973	1977	Change	1977	1982	Change
Total	45.2	42.5	−2.8	48.4	46.5	−1.9	61.7	59.7	−2.0
Sex									
Male	48.2	45.3	−2.9	51.9	49.7	−2.2	64.9	62.7	−2.2
Female	42.3	39.8	−2.5	45.1	43.3	−1.8	58.6	56.9	−1.7
Race									
White	46.8	44.4	−2.4	50.6	48.7	−1.9	—	—	—
Black	34.1	32.1	−2.0	35.8	33.0	−2.8	—	—	—
Region									
Northeast	47.1	44.1	−3.0	49.4	48.8	−0.8	64.2	60.1	−4.1
Southeast	42.0	40.9	1.1	46.3	44.3	−2.0	57.4	57.3	−0.1
Central	45.5	43.1	−2.4	49.4	47.7	−1.7	62.8	61.9	−0.9
West	45.4	41.4	−4.0	48.0	45.5	−2.5	61.1	58.7	−2.4
Parental education									
Not graduated high school	39.5	36.2	−3.3	41.8	39.6	−2.2	—	—	—
Graduated high school	44.1	41.1	−3.0	46.7	44.5	−2.2	—	—	—
Post high school	49.4	46.7	−2.7	53.1	51.1	−2.0	—	—	—
Size and type of community									
Rural	42.3	41.1	−1.2	49.2	46.9	−2.3	—	—	—
Disadvantaged urban	40.1	35.2	−4.9	47.6	46.2	−1.4	—	—	—
Advantaged urban	51.1	46.9	−4.2	40.3	36.4	−3.9	—	—	—
Main big city	43.4	39.2	−4.2	53.1	50.9	−2.2	—	—	—
Urban fringe	47.3	43.8	−3.5	44.8	42.1	−2.7	—	—	—
Medium city	45.9	42.4	−3.5	49.5	49.0	−0.5	—	—	—
Small places	44.7	43.0	−1.7	48.3	46.7	−1.6	—	—	—

—Not available.

[1] Data from the Science Assessment and Research Project is not included for 9-year-olds because change for total content items was not reported.

NOTE: The mean change is equal to the difference in the mean correct for each year, but may differ in this table due to rounding.

SOURCE: National Assessment of Educational Progress, *Three National Assessments of Science, 1969–77: Changes in Achievement*, 1978 (Center for Statistics calculations). For change data from 1977 to 1982: Science Assessment and Research Project, *Images of Science*, 1983.

Table A3a

Average percent correct on an international test of mathematics achievement for students in the 8th grade* or equivalent in participating developed countries: 1982

Country or province	Total sample size	Average percent correct on 157 items	Arithmetic mean percent	Algebra mean percent	Geometry mean percent	Statistics mean percent	Measurement mean percent
Belgium							
Flemish	3,073	54.0	58.0	52.9	42.5	58.2	58.2
French	2,025	51.5	57.0	49.1	42.8	52.0	56.8
Canada							
British Columbia	2,168	52.3	58.0	47.9	42.3	61.3	51.9
Ontario	4,666	49.5	54.5	42.0	43.2	57.0	50.8
England and Wales	2,612	48.4	48.2	40.1	44.8	60.2	48.6
Finland	4,382	48.2	45.5	43.6	43.2	57.6	51.3
France	8,317	53.5	57.7	55.0	38.0	57.4	59.5
Hungary	1,754	56.6	56.8	50.4	53.4	60.4	62.1
Japan	8,091	63.5	60.3	60.3	57.6	70.9	68.6
Netherlands	5,418	58.1	59.3	51.3	52.0	65.9	61.9
New Zealand	5,176	46.4	45.6	39.4	44.8	57.3	45.1
Scotland	1,320	49.3	50.2	42.9	45.5	59.3	48.4
Sweden	3,451	43.5	40.6	32.3	39.4	56.3	48.7
United States	6,648	46.0	51.4	42.1	37.8	57.7	40.8
International mean for 14 countries or provinces	59,101	52.0	53.1	46.4	44.8	59.4	53.8

* The grade for analysis was defined as that grade in which a majority of students attained the age 13.0 to 13.11 by the middle of the school year. That grade was the 7th grade for Japan.

SOURCE: Livingstone, I.D., "Perceptions of the Intended and Implemented Mathematics Curriculum," a report of the Second International Mathematics Study prepared for the U.S. Department of Education, Center for Statistics by the members of the International Association for the Evaluation of Educational Achievement, June 1985.

Table A3b

Average achievement score on an international test in algebra and calculus taken by advanced mathematics students in the 12th grade or equivalent in participating developed countries: 1982

Country or province	Percentage of age group in advanced mathematics classes	Mathematics achievement scores: For advanced mathematics students		Mathematics achievement scores: For top 5 percent of group (estimate)	
		Algebra	Calculus	Algebra	Calculus
Belgium					
Flemish	10	51.3	49.8	57.5	55.5
French	10	48.0	47.9	55.3	53.7
Canada					
British Columbia	30	45.1	39.8	60.9	51.8
Ontario	19	48.7	49.4	59.6	59.4
England and Wales	6	52.3	53.6	54.9	56.1
Finland	15	53.0	52.7	60.7	61.0
Hungary	50	43.8	41.8	60.9	57.7
Japan	12	57.1	57.6	63.7	66.5
New Zealand	11	49.0	50.8	56.8	57.7
Scotland	18	45.7	44.6	56.2	52.9
Sweden	12	49.9	51.4	58.5	59.2
United States	13	43.7	43.2	52.8	50.9

SOURCE: Miller, D. and Linn, R.L., "Cross National Achievement with Differential Retention Rates," unpublished contractor report prepared for the U.S. Department of Education, Center for Statistics, April, 1986, special tabulations.

Table A4a

State tables of average college entrance examination scores: 1982 and 1985

SAT States	High school graduates 1985	Percentage of high school graduates taking test*	High school graduates 1982	Percentage of high school graduates taking test*
California	904	40.7	899	38.4
Connecticut	915	68.3	896	69.1
Delaware	918	54.1	897	49.5
Dist. of Col.	844	53.4	821	50.4
Florida	884	42.4	889	37.5
Georgia	837	50.4	823	49.1
Hawaii	877	48.8	857	47.2
Indiana	875	48.6	860	47.1
Maine	898	51.5	890	46.4
Maryland	910	51.3	889	50.3
Massachusetts	906	65.8	888	65.6
New Hampshire	939	57.0	925	56.4
New Jersey	889	63.2	869	64.7
New York	900	62.8	896	61.6
North Carolina	833	48.8	827	46.6
Oregon	928	44.7	908	41.7
Pennsylvania	893	52.2	885	51.4
Rhode Island	895	60.0	877	60.7
South Carolina	815	46.3	790	49.2
Texas	878	36.1	868	32.4
Vermont	919	56.5	904	54.2
Virginia	908	53.6	888	51.0

ACT States	High school graduates 1985	Percentage of high school graduates taking test*	High school graduates 1982	Percentage of high school graduates taking test*
Alabama	17.6	51.5	17.2	55.3
Alaska	17.6	36.6	18.7	31.5
Arizona	18.7	38.3	18.7	41.2
Arkansas	17.4	52.8	17.7	56.3
Colorado	19.7	60.4	19.6	66.8
Idaho	18.8	55.2	18.9	55.2
Illinois	18.9	61.3	18.6	67.4
Iowa	20.3	57.1	20.3	54.5
Kansas	19.1	62.1	18.9	60.8
Kentucky	17.9	51.9	17.5	53.7
Louisiana	16.5	60.7	16.7	60.8
Michigan	18.9	51.9	18.7	51.4
Minnesota	20.2	29.5	20.2	26.9
Mississippi	15.5	64.2	15.5	74.4
Missouri	18.8	48.9	18.7	45.3
Montana	19.5	52.1	19.5	49.5
Nebraska	19.7	62.9	19.9	73.0
Nevada	18.5	43.6	18.3	44.5
New Mexico	17.5	54.4	17.6	56.5
North Dakota	16.1	66.9	17.8	64.5
Ohio	19.2	46.9	19.0	49.2
Oklahoma	17.5	51.3	17.6	51.4
Tennessee	17.6	52.6	17.5	56.3
Utah	18.9	64.0	18.4	66.4
West Virginia	17.4	47.8	17.4	48.5
Wisconsin	20.3	35.3	20.4	32.0
Wyoming	19.4	56.9	19.2	52.2

* Estimated.

SOURCE: U.S. Department of Education, Office of Planning, Budget and Evaluation, *State Education Statistics*, 1986.

Table A4b

Average scores on the Preliminary Scholastic Aptitude Test: 1959 to 1984

Year	Verbal score	Mathematics score
1959	41.2	45.0
1960	40.9	44.8
1961	42.3	46.1
1962	42.9	46.5
1963	43.3	45.6
1964	42.9	44.7
1965	42.2	45.9
1966	42.7	45.0
1967	42.0	44.5
1968	42.6	45.6
1969	42.2	45.0
1970	41.4	46.1
1971	42.2	45.2
1972	42.7	46.9
1973	41.8	45.5
1974	41.6	45.9
1975	41.0	45.5
1976	40.5	45.0
1977	39.9	44.2
1978	40.6	44.8
1979	40.2	45.3
1980	40.6	45.1
1981	41.5	45.1
1982	41.0	44.7
1983	40.9	44.7
1984	41.0	44.2

SOURCE: College Board and National Merit Scholarship Corporation, 1984 *Preliminary Scholastic, Aptitude Test, National Merit Scholarship Qualifying Test October Administrations, Statistical Summary,* 1984.

Table A5

Percentage of high school graduates scoring 26 or more on the English and mathematics tests in the American College Testing Program: 1972 to 1984

Graduation year	Number of graduates (in thousands)	English		Mathematics	
		Number	Percentage	Number	Percentage
1972	3,001	20,319	0.7	77,890	2.6
1973	3,036	44,246	1.5	169,611	5.6
1974	3,073	36,998	1.2	155,390	5.1
1975	3,133	35,722	1.1	150,030	4.8
1976	3,148	34,583	1.1	131,415	4.2
1977	3,155	44,614	1.4	148,712	4.7
1978	3,127	53,884	1.7	153,954	4.9
1979	3,117	46,813	1.5	140,438	4.5
1980	3,043	49,332	1.6	147,996	4.9
1981	3,020	50,146	1.7	142,079	4.7
1982	3,001	56,316	1.9	136,768	4.6
1983	2,888	58,471	2.0	142,001	4.9
1984	2,773	59,970	2.2	137,620	5.0

SOURCE: American College Testing Program, *High School Profile Report: Normative Data, various years.* U.S. Department of Education, Center for Statistics, *Digest of Education Statistics, 1987 Edition.* (forthcoming)

Table A6

Average proficiency scores on the literacy scales for the young adult population, by selected characteristics: 1985

Selected characteristics	NAEP reading scale	Prose scale	Document scale	Quantitative scale
	Proficiency scale means			
Total	305.0	305.0	305.0	305.0
Sex				
Male	304.6	305.6	305.3	304.9
Female	305.4	304.5	304.8	305.1
Race/ethnicity				
White	313.8	314.4	315.7	314.6
Black	263.3	258.3	255.7	259.1
Hispanic	286.6	285.5	278.7	280.3
Other	299.0	304.5	298.2	306.4
Region				
Northeast	310.8	311.1	309.2	309.1
Southeast	291.7	289.8	291.4	290.6
Central	307.4	309.3	311.7	311.7
West	310.2	309.9	309.5	308.5
Respondent education				
Less than high school	234.7	237.4	225.3	234.9
Some high school	262.7	262.9	256.3	261.2
High school, some postsecondary	296.3	295.3	295.5	295.8
2-year, 4-year degree or more	335.6	336.8	339.4	336.8
Parental education				
Less than high school	274.8	268.1	267.1	267.5
Some high school	272.2	272.6	273.5	277.3
High school, some postsecondary	305.0	304.4	304.1	303.0
2-year, 4-year degree or more	326.8	329.1	329.3	329.1
Twelve-month employment status				
Full time, all year	302.9	303.3	302.5	301.7
Part time, all year	321.1	320.8	325.3	323.0
Full time, part year	309.3	307.5	309.8	309.8
Part time, part year	312.2	313.7	311.4	311.4
Unemployed	260.3	255.6	245.5	258.3
In school	313.5	313.6	313.8	320.5
Keeping house	277.5	279.5	275.7	277.5

SOURCE: Kirsch, I. and Jungeblut, A. *Literacy: Profiles of America's Young Adults*, Final Report (Report No. 16–PL–01) Princeton, NJ: National Assessment of Educational Progress, 1986.

Table A7

Current expenditures per pupil in average daily attendance in public elementary and secondary schools by State: 1970–71 and 1983–84[1]

State	Current expenditures per pupil (in 1983–84 dollars)		Percent increase	State	Current expenditures per pupil (in 1983–84 dollars)		Percent increase
	1970–71[2]	1983–84			1970–71	1983–84	
US (Total)	$2335	$3173	35.9				
AK	3862	8627	123.4	MS	$1543	$2080	34.8
AL	1550	2055	32.6	MT	2153	3604	67.4
AR	1538	2235	45.3	NC	1758	2303	31.0
AZ	2007	2751	37.1	ND	1902	3028	59.2
CA	2319	2963	27.8	NE	2217	3221	45.3
CO	2155	3373	56.5	NH	2053	2980	45.2
CT	2706	4023	48.7	NJ	3016	4483	48.6
DE	2683	3849	43.5	NM	1912	2928	53.1
DC	3019	4783	58.4	NV	2101	2690	28.0
FL	2125	2932	38.0	NY	4016	5117	27.4
GA	1830	2352	28.5	OH	2045	2982	45.8
HI	2622	3334	27.2	OK	1732	2880	66.3
IA	2309	3274	41.8	OR	2594	3677	41.8
ID	1666	2181	30.9	PA	2440	3648	49.5
IL	2655	3298	24.2	RI	2568	3938	53.3
IN	2073	2725	31.5	SC	1689	2183	29.2
KS	2109	3284	55.7	SD	1989	2685	35.0
KY	1717	2311	34.6	TN	1597	2100	31.5
LA	2027	2670	31.7	TX	1802	2784	54.5
MA	2376	3595	51.3	UT	1797	2053	14.3
MD	2663	3858	44.9	VA	2030	2878	41.8
ME	1925	2700	40.3	VT	2189	3147	43.8
MI	2581	3605	39.7	WA	2378	3465	45.7
MN	2688	3395	26.3	WI	2522	3513	39.3
MO	1955	2748	40.6	WV	1861	2879	54.7
				WY	2386	4523	89.6

[1] Includes expenditures for day schools only; excludes adult education, community colleges, and community services.

[2] Using the Consumer Price Index, these data were adjusted to 1983–84 purchasing power and from the calendar year to the school year.

SOURCE: U.S. Department of Education, Center for Statistics, *Digest of Education Statistics, 1985–86.*

Table A8

State indices of public school finance in relation to population: 1972–73 and 1983–84

State	State index 1972–73	State index 1983–84	State and local education revenues[1] (In millions) 1983–84	Public elementary/secondary enrollment (In thousands) 1983–84	Per pupil education revenues 1983–84	State per capita personal income 1983–84
Wyoming	181	483	$582	101	$5,763	$11,926
Alaska	248	386	617	93	6,634	17,209
Montana	240	352	540	154	3,503	9,940
New York	321	338	11,753	2,675	4,394	13,014
Oregon	260	327	1,576	447	3,525	10,766
Pennsylvania	272	316	6,296	1,738	3,622	11,468
Vermont	292	314	282	90	3,133	9,964
New Jersey	257	306	4,915	1,148	4,281	13,999
Rhode Island	263	293	466	136	3,426	11,699
Minnesota	292	289	2,425	705	3,440	11,902
New Mexico	212	286	747	270	2,767	9,658
Iowa	242	284	1,509	497	3,036	10,696
Colorado	219	283	1,961	542	3,619	12,771
Wisconsin	257	281	2,458	774	3,175	11,303
Michigan	261	280	5,586	1,736	3,218	11,475
Delaware	253	277	318	91	3,495	12,612
Washington	225	276	2,469	736	3,355	12,163
Kansas	219	269	1,317	405	3,251	12,104
Nebraska	202	268	799	267	2,993	11,177
Maine	234	265	547	209	2,617	9,859
West Virginia	205	265	902	371	2,431	9,160
Massachusetts	255	265	3,090	879	3,515	13,259
Florida	192	262	4,549	1,496	3,041	11,593
Maryland	259	262	2,336	683	3,420	13,048
North Dakota	211	262	358	117	3,058	11,672
Oklahoma	195	258	1,676	591	2,836	10,988
Indiana	226	258	2,684	984	2,728	10,571
Connecticut	264	258	1,842	478	3,854	14,943
Ohio	207	257	5,274	1,827	2,887	11,217
South Dakota	212	255	309	123	2,511	9,849
Utah	216	253	863	379	2,277	9,002
Louisiana	230	249	2,000	782	2,558	10,261
Texas	198	243	8,495	2,990	2,841	11,686
Arizona	210	240	1,285	503	2,555	10,654
South Carolina	194	235	1,304	605	2,155	9,168
Hawaii	192	234	460	162	2,840	12,117
Dist. of Col.	186	234	326	89	3,663	15,676
Georgia	178	234	2,551	1,051	2,427	10,389
Idaho	170	233	457	206	2,218	9,534
Virginia	205	233	2,724	966	2,820	12,121
Missouri	218	231	2,030	795	2,553	11,030
Illinois	212	219	5,022	1,853	2,710	12,402
New Hampshire	211	218	420	159	2,642	12,106
California	230	214	11,574	4,089	2,831	13,256
North Carolina	185	207	2,211	1,090	2,028	9,804
Arkansas	176	206	797	432	1,844	8,936
Mississippi	172	200	763	468	1,630	8,155
Kentucky	190	199	1,208	647	1,867	9,397
Alabama	172	198	1,317	722	1,824	9,229
Nevada	185	193	361	150	2,407	12,443
Tennessee	154	176	1,376	822	1,674	9,514

[1] Data are preliminary.

SOURCES: U.S. Department of Education, Center for Statistics, *Indicators of Education Status and Trends*, January, 1985; unpublished tabulations from the Common Core of Data. U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*. Bureau of the Census, Current Population Reports, Series P–25 No. 944, *Estimates of the Population of States: July 1, 1981, to 1983* (Advance Report). January 1984.

Table A9

Past and projected trends in elementary/secondary public school enrollment, by grade level: Fall 1980 to fall 1994

Fall of year	School enrollment (In thousands)		
	Pre-primary to 12th grade	Pre-primary to 8th grade	9th to 12th grade
1980	40,987	27,674	13,313
1981	40,099	27,245	12,844
1982	39,652	27,156	12,496
1983	39,352	26,997	12,355
1984[1]	39,305	26,929	12,376
		Projected[1]	
1985	39,386	26,927	12,459
1986	39,558	27,215	12,343
1987	39,731	27,660	12,071
1988	39,864	28,192	11,672
1989	40,115	28,759	11,356
1990	40,590	29,377	11,213
1991	41,207	29,899	11,308
1992	41,889	30,406	11,483
1993	42,560	30,864	11,696
1994	43,237	31,129	12,108

For methodological details, see *Projections of Education Statistics to 1992–93,* 1985.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools*, various years. *Projections of Education Statistics to 1992–93,* 1985, and unpublished tabulations (December 1984).

Table A10

Percentage of children 5 to 14 years old who changed residence between 1975 and 1980, by region, State of residence in 1980, and type of move

State and region	Type of move			
	Any change in residence	Within county	Different county, same State	Different State
	Percent			
United States	48.2	28.7	9.6	9.9
Northeast	39.3	25.8	7.4	6.1
Connecticut	42.9	26.3	7.0	9.6
Maine	43.7	25.6	7.3	10.8
Massachusetts	38.2	26.1	6.2	5.9
New Hampshire	49.7	26.0	5.8	17.9
New Jersey	40.7	23.9	8.2	8.6
New York	38.2	26.0	8.9	3.3
Pennsylvania	37.8	25.4	6.7	5.7
Rhode Island	41.4	28.0	4.9	8.5
Vermont	43.6	25.5	6.0	12.1
North Central	47.4	29.8	9.9	7.7
Illinois	46.5	32.3	7.9	6.3
Indiana	49.5	31.7	9.5	8.3
Iowa	46.6	27.2	10.5	8.9
Kansas	54.6	29.7	10.0	14.9
Michigan	45.8	29.8	10.4	5.6
Minnesota	43.7	23.5	12.7	7.5
Missouri	51.4	28.1	12.4	10.9
Nebraska	50.5	27.0	10.7	12.8
North Dakota	48.9	24.8	9.9	14.2
Ohio	47.7	32.3	9.1	6.3
South Dakota	49.3	36.5	0.2	12.6
Wisconsin	44.8	27.4	10.2	7.2
South	50.2	28.3	10.0	11.9
Alabama	46.7	29.6	7.1	10.0
Arkansas	52.5	29.3	9.2	14.0
Delaware	44.4	29.7	1.9	12.8
District of Columbia	38.7	29.4		9.3
Florida	54.9	28.4	8.1	18.4
Georgia	50.8	38.0	1.4	11.4
Kentucky	50.1	31.4	9.1	9.6
Louisiana	45.2	27.9	8.8	8.5
Maryland	46.6	25.4	10.4	10.8
Mississippi	43.8	26.6	7.6	9.6
North Carolina	46.6	28.9	8.1	9.6
Oklahoma	59.2	29.2	13.5	16.5
South Carolina	44.7	26.4	7.3	11.0
Tennessee	51.1	32.0	7.6	11.5
Texas	53.4	29.9	12.5	11.0
Virginia	51.0	21.6	15.4	14.0
West Virginia	43.3	27.2	6.3	9.8

Table A10

Percentage of children 5 to 14 years old who changed residence between 1975 and 1980, by region, State of residence in 1980, and type of move, continued

State and region	Type of move			
	Any change in residence	Within county	Different county, same State	Different State
West	55.8	31.3	10.8	13.7
Alaska	63.8	27.6	8.5	27.7
Arizona	56.5	29.3	5.0	22.2
California	53.9	33.9	12.0	8.0
Colorado	61.6	25.7	14.6	21.3
Hawaii	45.1	27.9	2.8	14.4
Idaho	58.8	27.4	9.2	22.2
Montana	56.3	27.3	12.2	16.8
Nevada	64.1	29.5	4.0	30.6
New Mexico	49.6	24.7	6.8	18.1
Oregon	63.4	30.1	14.1	19.2
Utah	53.2	29.5	8.9	14.8
Washington	58.6	30.0	10.1	18.5
Wyoming	65.0	25.9	8.5	30.6

NOTE: Data are for children residing in the State designated in 1980 and who lived at a different residence 5 years before.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "Rates of Movement, Migration, and Interstate Migration among Children 5 to 14 Years Old, by State, 1960, 1970, and 1980," unpublished report, 1984.

Table A11

Number of courses required for high school graduation in 1980 and 1985, year effective, and increase of units required, by State: 1985

State	Number of units required, 1980	Number of units required, 1985	Year effective[1]	Change 1980–85
Alabama	20	20	1985	0
Alaska	19	21	1985	2
Arizona	16	20	1987	4
Arkansas	16	20	1988	4
California	(2)	13	1987	—
Colorado	Local boards determine		—	—
Connecticut	(2)	20	1988	—
Delaware	18	19	1987	1
District of Columbia	17.5	20.5 or 23	1985	3 or 5.5
Florida	(2)	24	1987	—
Georgia	20	21	1988	1
Hawaii	18	20	1983	2
Idaho	18	20	1988	2
Illinois	16	16	1988	0
Indiana	16	19.5	1989	3.5
Iowa	Local boards determine all but 25 units		—	—
Kansas	17	21	1989	4
Kentucky	18	20	1987	2
Louisiana	20	23	1989	3
Maine	16	16	1989	0
Maryland	20	20	(3)	0
Massachusetts	Local boards determine all but 5 units		—	—
Michigan	Local boards determine all but .5 units		—	—
Minnesota	15	20	1982	5
Mississippi	16	16	(4)	0
Missouri	20	22 or 24	1988	2 or 4
Montana	16	20	1986	4
Nebraska	160 semester hours	200 credit hours	1991	—
Nevada	19	20	1986	1
New Hampshire	16	19.75	1989	3.75
New Jersey	18.5	18.5	1985	0
New Mexico	20	21	1987	1
New York	16 or 18	18.5	1989	0 or 2.5
North Carolina	16	20	1987	4
North Dakota	17	17	1984	0
Ohio	17	18	1988	1
Oklahoma	18	15 or 20	1988 or 1987	−3 or 2
Oregon	21	22	1988	1
Pennsylvania	13	21	1989	8
Rhode Island	16	16 or 18	1989 or 1988	0 or 2
South Carolina	18	20	1987	2
South Dakota	16	20	1989	4
Tennessee	18	20	1987	2
Texas	18	21 or 22	1988	3 or 4
Utah	15	24	1988	9
Vermont	16	15.5	1989	−0.5
Virginia	18	20 or 22	1988 or 1985	2 or 4
Washington	15	18	1989	3
West Virginia	17	21	1989	4
Wisconsin	(2)	13	1989	—
Wyoming	18	18	(3)	0

—Not applicable.

[1] Effective for the graduating class of this year.

[2] Local boards determine requirements.

[3] No change in requirements.

[4] Effective date not yet established.

NOTE: Some States award more than one type of high school diploma, with each type requiring a different number of units.

SOURCE: Education Commission of the States, Department of Research and Information, *Clearinghouse Notes*, "Minimum High School Graduation Course Requirements in the States", November 1985.

Table A12

State minimum competency testing for elementary and secondary school assessment purposes: 1985

States using minimum competency	Government level setting standards	Grade levels assessed	Grade promotion	High school graduation	Early exit	Remediation	Other	First graduating class assessed
Alabama	State	3,6,9,11		X		X	X	1985
Arizona	State/local	8,12	(¹)	X				1976
Arkansas	State	3,4,6,8				X		
California	State/local	4–11, 16 yr old+		X	X	X	X	
Colorado	Local	9,12		Local option				1979
Connecticut[2]	State	4,6,8				X	X	
Delaware	State	1–8,11		X			X	1981
Florida	State/local	3,5,8,11	X	X	X			1983
Georgia	State	K,1,3,6,8,10	(³)	X		X	X	1985
Hawaii[4]	State	3,9–12		X		X	X	1983
Idaho	State	8–12				X	X	1982
Illinois	Local	Local option					Local option	
Indiana	Local	3,6,8,10				X	X	
Kansas[5]	State	2,4,6,8,10					Local option	
Kentucky[6]		K–12	X	X		X		
Louisiana[7]	State	2,3,4,5	X					
Maryland	State	7,9		X		X	X	1982
Massachusetts	Local	Local option				X		
Michigan	State	4,7,10				X	Local option	
Missouri	State	8+				X	X	
Mississippi	State	3,5,8,11		X			X	1987[8]
Nebraska	Local	5+					X	
Nevada	State	3,6,9,11		X		X		1982
New Hampshire[9]	State	4,8,12	Local option	Local option			Local option	
New Jersey	State	9–12		X		X	X	1985
New Mexico	State	10–12					X	1981
New York	State	3,5,6,8–12		X		X		1979
North Carolina[10]	State	3,6,8,10		X			X	1980
Ohio	Local	Local option[11]				X	Local option	1990
Oklahoma[12]	None	3,6,9,12					X	
Oregon	Local	Local option		X				1978
Pennsylvania	State	3,5,8				X		
South Carolina[13]	State	1,2,3,6,8,11	X	X		X	X	1990
Tennessee	State/local	3,6,8,9–12	X	X		X		1982
Texas	State	1,3,5,7,9,11,12		X		X	X	1987
Utah	Local	Local option				X	X	1988
Vermont	State	1–8					X	1981
Virginia	State/local	K–6,10–12		X			X	
Wisconsin	Local	1–4,5–8,9–10	Local option	Local option		X		
Wyoming	Local	Local option				X		

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[1] 1983 legislation calls for Arizona to develop a minimum course of study and criteria for high school graduation standards and for grade-to-grade promotion criteria. Local school districts are implementing standards.

[2] In Connecticut, a new program of State testing for Grade 4 began in 10/85 and will be expanded to Grades 6 and 8 in 10/86. The testing is the State Criterion-referenced Mastery Program. The Grade 9 State proficiency test, begun in 1980, will be administered for the final time in 1986.

[3] Effective 8/85, third grade students must demonstrate acceptable performance on criterion-referenced tests in mathematics and reading before promotion to the fourth grade. Beginning in the 1988–89 school year, students must pass the school readiness test to be eligible for first grade.

[4] In Hawaii, students have three options: paper/pencil test; performance test; or course. Students must take a paper/pencil test the first time (Grade 9).

[5] The Kansas Minimum Competency Assessment (MCA) was reestablished by 1984 legislative action (SB 473). The MCA will be in effect for 5 school years, 1984-85 through 1988-89.

[6] Kentucky's 1984 legislation requires the State Superintendent recommend a process of using test results for promotion and graduation to the 1986 legislature.

[7] Louisiana will add Grade 8 beginning with the 1986-87 school year.

[8] Although the first class assessed will graduate in 1987, the first class required to pass for graduation will be the class of 1989.

[9] New Hampshire requires students be tested in elementary, middle, and high school. Some local districts test in grades other than 4, 8, and 12.

[10] In North Carolina, grades 3, 6, and 8 are given an annual standardized achievement test. Local school districts use the results as a diagnostic tool.

[11] Locally based, competency-based education programs are given in the areas of English composition, math, and reading, including testing at least once in grades 1-4. Grades 5-8 and 9-11 shall be implemented no later than 1989-90.

[12] Test was given in Oklahoma during the 1978-79 school year. There has been no followup to the program. However, a plan for statewide testing was submitted for legislative action in January 1985.

[13] The South Carolina Education Improvement Act of 1984 specifies that the 11th grade test being used to gather base-line data be replaced in the 1985-86 school year with an exit exam in the 10th grade. All students graduating in 1990 and after must pass the exam.

NOTE: Some States have dates for first high school graduating class to be assessed with no expected use for high school graduation. American Samoa is currently developing a minimum competency testing program.

SOURCE: Education Commission of the States, Department of Research and Information. *Clearinghouse Notes*, "State Activity—Minimum Competency Testing" November 1985.

Table A13a

Percent instructional expenditures are of total expenditures[1] for institutions of higher education, by type and control: Fiscal years 1979 through 1984

Fiscal year	All institutions[2]	Doctoral	Comprehensive	General baccalaureate	2-year
			Public Institutions		
1979	41.8	39.4	47.9	44.4	50.2
1980	41.5	39.0	47.4	43.7	50.3
1981	41.4	38.8	47.5	43.5	50.6
1982	41.9	39.1	48.2	43.7	50.8
1983	41.9	39.1	48.4	44.1	50.8
1984	41.5	38.9	47.9	44.0	50.8
			Private institutions		
1979		36.4	41.8	36.6	34.4
1980		37.0	41.1	36.0	33.9
1981		37.2	40.6	35.5	34.1
1982		38.2	40.8	35.7	33.9
1983		38.3	41.0	35.6	33.7
1984		37.5	40.7	35.2	31.2

[1] Expenditures entail education and general expenditures and mandatory transfers, including all current funds expenditures except those for auxiliary enterprises, hospitals, and independent operations, and their associated mandatory transfers. Expenditure data for fiscal years 1983 and 1984 were adjusted to make them consistent with data from prior fiscal years.

[2] Included among all institutions but not presented separately in the table are new and specialized institutions.

SOURCE: U.S. Department of Education, Center for Statistics, "Financial Statistics of Institutions of Higher Education," unpublished tabulations for all years.

Table A13b

Scholarship and fellowship expenditures as a percentage of total expenditures[1] for institutions of higher education, by type and control: Fiscal years 1979 through 1984

Fiscal year	All institutions[2]	Doctoral	Comprehensive	General baccalaureate	2-year
			Public Institutions		
1979	4.9	3.5	3.2	5.3	2.2
1980	4.9	3.5	3.3	5.6	2.3
1981	5.0	3.5	3.0	5.6	2.2
1982	4.9	3.4	3.0	5.7	2.1
1983	5.0	3.4	3.0	5.1	2.1
1984	5.2	3.5	2.9	4.8	2.0
			Private Institutions		
1979		8.0	9.3	12.0	6.6
1980		7.8	9.6	12.2	7.2
1981		8.1	9.6	12.7	7.1
1982		8.2	9.6	12.6	6.6
1983		8.1	9.4	12.7	7.0
1984		8.7	10.2	13.6	6.1

[1] Expenditures entail education and general expenditures and mandatory transfers, including all current funds expenditures except those for auxiliary enterprises, hospitals, and independent operations, and their associated mandatory transfers. Expenditure data for fiscal years 1983 and 1984 were adjusted to make them consistent with data from prior fiscal years.

[2] Included among all institutions but not presented separately in the table are new and specialized institutions.

SOURCE: U.S. Department of Education, Center for Statistics, "Financial Statistics of Institutions of Higher Education," unpublished tabulations for all years.

Table A14

Average amount of awards received for six Federal student financial aid programs: Fiscal years 1973–74 to 1984–85

School year	Pell Grant	SEOG	CW-S	NDSL	SSIG	GSL
	Average award (in constant dollars)[1]					
1973–74	$270	$571	$532	$661	([2])	$1,137
1974–75	589	473	484	604	$262	1,135
1975–76	643	441	446	574	423	1,127
1976–77	601	438	505	591	445	1,136
1977–78	565	371	421	586	419	1,197
1978–79	572	373	499	454	423	1,282
1979–80	572	366	429	448	390	1,303
1980–81	504	308	484	512	335	1,255
1981–82	448	298	458	460	297	1,198
1982–83	462	264	421	436	261	1,103
1983–84	449	258	410	440	277	1,056
1984–85[3]	471	242	387	387	220	1,022

[1] Current dollars were converted to constant (1973–74) dollars using the Highest Education Price Index.
[2] Data for this year are not available because the program was not in existence.
[3] With the exception of the GSL program, data for this year are estimates.

NOTE: SEOG = Supplemental Educational Opportunity Grants
CW-S = College Work-Study
NDSL = National Direct Student Loans
SSIG = State Student Incentive Grants
GSL = Guaranteed Student Loans

SOURCE: U.S. Department of Education, Office of Postsecondary Education, unpublished tabulations.

B. Sources of Data

The information presented in this report was obtained from many sources, including Federal and State agencies, private research organizations, and professional associations. The data were collected using several research methods, including surveys of a universe (such as all colleges) or of a sample, compilations of administrative records, and statistical projections. Particular care should be taken in comparing data from the different sources. Differences in procedures, timing, phrasing of questions, interviewer training, and so forth, mean that the results from the several sources are not strictly comparable.

The information in this report is identified by the sponsoring agency or organization. Government sources are presented first, followed by private research and professional associations. A description of the information source and methods of data collection used for each data source is presented, followed by a general discussion of data accuracy and, where applicable, standard error tables. More extensive documentation of survey procedures does not imply more problems with the data, only that more information is available from some sources than others.

1. Government Sources

Bureau of the Census

Current Population Survey

Estimates of school enrollment as well as social and economic characteristics of students are based on data collected in the Census Bureau's monthly household survey. The monthly Current Population Survey (CPS) sample consists of 614 areas, comprising 1,113 counties, independent cities, and minor civil divisions throughout the 50 States and the District of Columbia. The sample was initially selected from the 1970 census files and is periodically updated to reflect new housing construction when possible.

The monthly CPS deals with labor force data for the civilian noninstitutional population (excludes military personnel and their families living on post and inmates of institutions). In addition, supplemental questions are asked about the education of all eligible members of the household. These questions in the October survey obtain information on highest grade completed, level of current enrollment, attendance status, number and type of courses, degree or certificate objective, and organizational type offering instruction.

The estimation procedure employed for the monthly CPS data involves the inflation of weighted sample results to independent estimates of characteristics of the civilian noninstitutional population in the United States by age, sex, and race. These independent estimates are based on statistics from decennial censuses; statistics on births, deaths, immigration, and emigration; and statistics on the strength of the Armed Forces. Generalized standard error tables are provided in the *Current Population Reports*.

Further information is available from

Paul Siegel
Education Branch
Bureau of the Census
Washington, DC 20233

1980 Census of the Population

Nation-wide population censuses have been taken in the United States every 10 years since 1790, as a requirement of the Constitution for apportionment of the House of Representatives. The 1980 census was conducted primarily through self-enumeration. Each person enumerated in the 1980 census was counted as an inhabitant of his or her "usual place of residence," which is generally construed to mean the place where the person lives and sleeps most of the time.

A census questionnaire was delivered by postal carriers to every housing unit several days before Census Day, April 1, 1980. This questionnaire included explanatory information and was accompanied by an instruction guide. In most areas of the United States, containing about 95 percent of the population, the householders returned their forms by mail. Households that did not mail back a form and vacant housing units were visited by an enumerator. Households that returned a form with incomplete or inconsistent information that exceeded a specified tolerance were contacted by telephone or if necessary in person to obtain the missing information.

In the remaining (mostly sparsely settled) area of the country, which contained about 5 percent of the population, the householder was requested to fill out the questionnaire and hold it until visited by an enumerator. Incomplete and unfilled forms were completed by interview during the enumerator's visit. Vacant units were enumerated by a personal visit and observation.

Each housing unit in the country received one of two versions of the census questionnaire: a short-form questionnaire containing a limited number of basic population and housing questions or a long-form questionnaire containing these basic questions as well as a number of additional questions. A sampling procedure was used to determine the units receiving the long-form questionnaire. Two sampling rates were employed. For most of the country, one in every six housing units (about 17 percent) received the long form or sample questionnaire; in counties, incorporated places, and minor civil divisions estimated to have fewer than 2,500 inhabitants, every other housing unit (50 percent) received the sample questionnaire to enhance the reliability of sample data in small areas.

For further information, contact

Bureau of the Census
Washington, DC 20233

The Center for Statistics

Common Core of Data

The Common Core of Data (CCD) survey is a coordinated effort administered by the Center for Statistics (CS) to acquire and maintain statistical data on the 50 States, the District of Columbia, and the outlying areas. The CCD survey is based on a universe of State education agencies and the education agencies of the District of Columbia and outlying areas. Information is collected annually on staff and students at the school, Local Education Agency (LEA), and State levels. Revenues and expenditures are collected at the LEA and State levels. Data are collected on a schoolyear basis (July 1 through June 30). Survey instruments are sent to the States by October 15 of the subsequent school year. States have a period of 2 years in which to modify the data originally submitted.

Since the CCD is a universe survey, the information presented in this report is not subject to sampling error. However, nonsampling error can occur from two main sources, nonresponse and misreporting. In the case of CCD, nonresponse is minimal, with education agencies submitting almost all of the four survey instruments each year.

With the submission of data for about 85,000 public schools and approximately 15,800 local school-districts compiled by 57 education agencies, the opportunity does exist, however, for misreporting, which may occur for a variety of reasons, for example, varying interpretation of CS definitions, or varying record keeping systems. CS attempts to minimize these errors by working closely with the Council of Chief State School Officers (CCSSO) and its Committee on Evaluation and Information Systems (CEIS).

As in any questionnaire survey, interpretation of instructions and definitions may vary among respondents. Because elementary/secondary education is a State and local responsibility, any statistical total for the Nation as a whole reflects a composite of the different reporting practices in the States and areas. The use of standard forms and definitions tends to minimize these variations. The State education agencies report data to CS from data collected and edited in their regular reporting cycles for which they are reimbursed by CS. CS encourages the agencies to incorporate into their own survey systems CS items they do not already collect so that they will also be available for the subsequent CCD survey. The result over time has been fewer missing cells in each State's response with a lessening need to impute data.

Upon receipt of the data from the education agencies at CS, the data are subjected to a comprehensive edit procedure. In cases where data are determined to be inconsistent, missing, or out-of-range, the education agencies are contacted for verification and when necessary, revisions are made. The indicator on expenditures per pupil is based on current expenditure data and average daily attendance data collected from each State through Part VI, *Revenues and Expenditures* of the Common Core of Data Survey. Current expenditures include instructional expenditures and expenditures on noninstructional and support services, but exclude capital outlay and debt service. Part VI is also the source of information on the Trends in Revenues Sources indicator. Excluded from those data are revenues of special school districts that receive their revenues through special channels. These school districts/schools include schools run by the Bureau of Indian Affairs, the Department of Defense, hospital schools, prison schools, and so on.

If questions arise concerning the Common Core of Data, they can be directed to

George H. Wade
General Surveys and Analysis Branch
Center for Statistics
555 New Jersey Avenue, NW.
Washington, DC 20208

Fast Response Survey System

The Fast Response Survey System (FRSS) was established by CS so that education data, needed within the Department of Education (ED) for planning and policy formulation, could be collected quickly and with minimum burden on respondents. FRSS provides preliminary estimates in as little as 4 months after the questionnaire has been developed. The system accomplishes this by using small, preselected, general-purpose national samples, prearranged data collection procedures, and short, easily answerable questionnaires. Since the inception of the FRSS in 1975, 24 surveys have been conducted. Data from the following two FRSS surveys were included in *The Condition of Education:*

(a) Survey of Remedial/Developmental Studies in Institutions of Higher Education, 1984

The survey of remedial/developmental courses in institutions of higher education was requested by the Office of the Under Secretary of the Department of Education to collect national data on the extensiveness and characteristics of remedial programs for freshmen. The survey was performed under contract with Westat, Inc. In August 1984, questionnaires were mailed to a stratified random sample of approximately 500 institutions of higher education, representing a universe ofabout 2,780 colleges and universities with freshmen classes. The survey form was completed by a person designated by the college as most familiar with the campus remedial program. The response rate for the survey was 96 percent. Estimates were adjusted for nonresponse and weighted to national totals. A student weight was also calculated for the percentage of freshmen enrolled in remedial courses. In general, coefficient of variation (CV's) for the percentage of institutions offering remedial courses ranged from 2 percent (for national estimates) to 10 percent (for estimates from subgroups). CV's for the percentage of freshmen enrolled in remedial courses ranged from 3 percent to 15 percent.

(b) Survey of School Discipline Policies and Practices

The survey of school discipline was requested by the Office of Research (formerly the National Institute of Education) in response to a request from the National Council on Educational Research. The survey was performed under contract with Westat, Inc. In February 1985, questionnaires were mailed to a stratified national probability sample of about 850 public junior and senior high schools, representing the universe of approximately 26,400 junior, senior, and combined schools. The survey form was completed by the school administrator (often the principal) most familiar with the discipline policies of the school. The response rate for the survey was 93 percent. Estimates were adjusted for nonresponse and weighted to national totals. Generally, CV's for national estimates ranged from 2 to 10 percent, while those for subgroups estimates ranged from 5 to 20 percent.

For further information about these FRSS surveys, contact
Helen Ashwick
Fast Response Survey System
Center for Statistics
555 New Jersey Avenue, NW.
Washington, DC 20208

Higher Education General Information Survey

The Higher Education General Information Survey (HEGIS) is a coordinated effort administered by the Center for Statistics (CS). Its purpose is to acquire and maintain statistical data on the characteristics and operations of institutions of higher education. HEGIS, developed in 1966, is an annual universe survey of institutions listed in the latest *Education Directory, Colleges and Universities*.

The information presented in this publication draws on HEGIS surveys that solicit information concerning institutional characteristics, faculty salaries, finances, enrollment, and degrees. These surveys are part of the overall HEGIS package and as such cover all institutions in the universe. The data presented, therefore, are not subject to sampling error but are subject to nonsampling error. Due to the differing information solicited by the various survey instruments, the sources of nonsampling errors differ among the survey instruments. Each survey will therefore be discussed separately. Since data from the faculty salaries survey have not been used in this publication, this survey will not be discussed. A validation study, "HEGIS Post-Survey Validation Study," was conducted for two HEGIS surveys, enrollment and degrees, in 1979 to validate data collected for the 1976-77 academic year. The information concerning the nonsampling error of these two surveys presented in this appendix draws on this study. More recent studies of HEGIS nonsampling errors have not been conducted.

(a) Institutional Characteristics of Colleges and Universities

The Institutional Characteristics Survey provides the basis for the universe of institutions presented in the *Education Directory, College and Universities*, and is used to determine the mailout for all other HEGIS data-collection activities. The universe is made up of institutions that offer at least a 1-year program of college-level studies leading toward a degree and that meet certain accreditation criteria. Each year institutions included in the prior year's *Directory* receive a computer printout of their information with a request to update. Institutions not previously included are sent a questionnaire form. All institutions reported in the Directory are certified as eligible to be listed by the Division of Eligibility and Agency Evaluation within the U.S. Department of Education.

(b) Opening Fall Enrollment in Institutions of Higher Education

The Opening Fall Enrollment in Institutions of Higher Education Survey has been part of the HEGIS series since its beginning, and similar surveys go back to the mid-1940's. The enrollment survey, like the HEGIS degree survey, does not appear to suffer significantly from problems of nonreturn. Response rates in recent years have been at least 95 percent. In 1977 the major sources of nonsampling error for this survey come from classification problems, interpretation of definitions, survey due date, and operational errors (e.g., institutional procedures). Of these, the classification of students (which may well be related to definitional problems) appeared to be the main source of error. Institutions had problems in correctly classifying first-time freshmen, other first-time students, and unclassified students for both full-time and part-time categories. These problems are more evident at 2-year institutions (both private and public) and the private 4-year institutions. In 1977-78 the classification problems led to an estimated overcount of 11,000 full-time students and an undercount of 19,000 part-time students.

Although the percentage error for the grand total was quite small (less than 1 percent), the percentage of errors for detailed student levels, for types of institutions, or for certain States might be as high as 5 percent or even higher.

(c) Degrees and Other Formal Awards Conferred

The Degrees and Other Formal Awards Conferred Survey has been part of the HEGIS series since its beginning. For the 1970-71 survey, however, the taxonomy used for classifying programs or areas in which degrees were awarded was changed. Once again in the 1982-83 academic year a different taxonomy, CIP (Classification of Instructional Programs), was introduced. The information from survey years 1970-71 through 1981-82 is directly comparable, but care must be taken if information before and after these dates is included in any comparison. The return rate, which has been approximately 90 percent over the years, does not appear to be a significant source of nonsampling error for this survey. Because of the high return rate, nonsampling error caused by imputation would also be minimal.

The major sources of nonsampling error for this survey are as follows: differences in the HEGIS program taxonomies and taxonomies used by the school, and classification of double majors and double degrees. In the validation study conducted in 1979, it was found that the sources of nonsampling error noted above contributed to an error rate of 0.3 percent overreporting of bachelor's degrees and 1.3 percent overreporting of master's degrees. The differences, however, varied greatly among fields. Over 50 percent of the fields selected for the study had no errors identified. The major categories of fields that had large differences were these: business and management, education, engineering, letters, and psychology. With few exceptions, differences in proportion to the published figures were less that 1 percent for most of the selected fields that had some errors.

(d) Financial Statistics in Institutions of Higher Education Survey

This survey has been part of the HEGIS series since its beginning. A number of changes were made in the financial survey instruments in 1975 and again in 1982 with the inclusion of Pell Grants as a separate revenue category. While these changes were significant, only comparable information on trends collected since 1979 is presented in this publication. Other possible sources of nonsampling error in the financial statistics are nonresponse, imputation, misclassification, and interpretation of definitions. The response rate has been over 86 percent for the years reported. Two general methods of imputation have been used: (1) if previous year's data were available for a nonresponding institution, these data were inflated using the Higher Education Price Index and adjusted according to changes in enrollments; or (2) if no previous year's data were available, current data were used from peer institutions selected for location (State or region), control, level, and enrollment size of institution. For the most recent year reported, the imputation method did not include the adjustment for changes in enrollments. It should be noted that the imputed current funds expenditures of the nonrespondents are less than 3 percent of the aggregate U.S. total.

To reduce reporting error, CS uses national standards for reporting finance statistics. These standards are contained in *College and University Business Administration: Administrative Services (1974 Edition)*, published by the National Association of College and University Business Officers; *Audits of Colleges and Universities* (as amended August 31, 1974), by the American Institute of Certified Public Accountants; and *Hegis Financial Reporting Guide (1980)*, by CS. Whenever possible, definitions and formats in the survey form are consistent with those in these three accounting texts. If questions exist concerning the surveys used as data sources for this report, or if other questions arise concerning HEGIS, they can be directed to

Martin Frankel
General Surveys and Analysis Branch
Postsecondary Education Statistics Division
Center for Statistics
555 New Jersey Avenue, NW.
Washington, DC 20208

National Assessment of Educational Progress

The National Assessment of Educational Progress (NAEP) is a Congressionally-mandated study funded by the Office of Educational Research and Improvement, U.S. Department of Education. The overall goal of the project is to determine the Nation's progress in education. To accomplish this goal, a cross-sectional study was designed and initially implemented in 1969. Each year NAEP has gathered information about levels of educational achievement across the country. NAEP has surveyed the educational accomplishments of 9-, 13-, and 17-year-olds, and occasionally young adults, in 10 learning areas. Different learning areas were assessed annually and, as of 1980-81, biennially. Each area has been periodically reassessed in order to measure possible changes in education achievement.

The mathematics, science, reading, and literacy assessments presented in this publication were conducted by either the Education Commission of the States (1969-1983) or the Educational Testing Service (1983 to the present). Multi-stage probability samples were used. The primary sampling units were stratified by region, and within region, by State, size of community, and for the two smaller sizes of community strata, by socioeconomic level. Assessment exercises were administered either to individuals or small groups of students by specially trained personnel.

Information from NAEP is subject to both nonsampling and sampling error. Two possible sources of nonsampling error are nonparticipation and instrumentation. The effects of nonparticipation are in some ways reduced through oversampling, although this does not assess the bias of nonparticipants. Instrumentation nonsampling error includes whether the NAEP assessment instruments measure what is being taught and in turn what is being learned by the students, ambiguous items or instructions, and insufficient time limits.

If questions exist concerning NAEP, contact
National Assessment of Educational Progress
P.O. Box 2923
Princeton, NJ 08541

National Longitudinal Study of the High School Class of 1972

The National Longitudinal Study (NLS) of the High School Class of 1972 periodically queries a national sample of the 1972 high school seniors to chart their educational, vocational, and personal development. NLS was initiated in the spring of 1972 by CS. Over 1,000 public and private schools and nearly 18,000 students participated. Four followup surveys have been conducted since the 1972 base-year survey: in the fall of 1973, 1974, 1976, and 1979. (A fifth followup is currently in the field.)

There are several major pieces of information in the NLS: data on students; selected information from student school records; and information on student test scores.

The original sample design was a deeply stratified two-stage probability sample with schools as first-stage sampling units and students as second-stage units. The first-stage sampling frame was constructed from computerized school files maintained by the Office of Education and by the National Catholic Education Association. Three strata were created: (1) schools in low-income areas or with high black enrollments; (2) schools with large enrollments; and (3) schools with small enrollments. Within the first stratum, schools were selected at twice the simple random sampling rate to ensure that the number of black students would be adequate for policy analysis. Within each of the other two strata, schools were selected at a fixed rate proportional to the total enrollment in that stratum. From each selected school, 18 students were randomly chosen to participate. The samples represent the Nation's 12th-grade enrollment in 1972 in all public and private schools.

One important source of nonsampling error in a longitudinal study is usually the decrease in return rates over time. With NLS, 948 of the 1,200 primary sample schools participated in the base-year survey. Of the remainder, 21 had no seniors enrolled, and 231 either refused to participate or could not because they had received the request too late in the school year. In the summer of 1973, CS made further attempts to secure the participation of the 231 schools that had not participated in the baseyear survey, and to replace the 21 schools that had no seniors. Consequently, additional schools and students were brought into the first followup even though complete base-year data were not available.

Due to the complexities of the base-year data collection, both base-year data availability rates and subsequent followup response rates are difficult to compute. However, using the augmented base-year sample, the return rates were quite high.

Among the 16,683 individuals responding to the base-year questionnaire, the percentages also responding in the first, second, third, and fourth followup were approximately 94, 93, 89, and 83 percent, respectively. Of the 21,350 first followup questionnaire respondents, 95, 91, and 84 percent also responded to the second, third, and fourth followups, respectively. Sample retention among the 20,782 second followup respondents was 94 percent for the third followup and 87 percent for the fourth. Approximately 91 percent of the 20,092 third followup respondents also responded to the fourth followup.

Another area of possible nonsampling error in the NLS estimates is that of sample weights and nonresponse adjustments. Since students were selected with unequal probability, simple weighted tabulations could be misleading; thus, sample weights were computed for each student. The unadjusted sample weights were calculated as the inverse of sample inclusion probabilities, which are a function of the school selection probabilities, and the student selection probabilities within schools.

To provide better estimates of the attributes of this population, it was necessary to address the problem of compensating for nonresponse, which was accomplished through weight adjustments. Because of the various sample redefinitions and augmentations, several sets of adjusted weights were computed. The general procedure used was a weighting-class approach, which distributes the weights of nonrespondents to respondents most like them. Weighting classes were defined by several survey classification variables: race, sex, high school curriculum, high school grades, and parents' education. Differential response rates for students in different weighting classes were reflected in this adjustment.

In addition to the nonresponse adjustment, the problem of nonresponse was addressed by identifying 88 critical questions. Special effort was then made to contact participants who failed to respond to these items in their questionnaires.

Estimates of the sampling errors for the NLS were calculated as a joint function of the estimated percentage and the sample size for the percentage base (denominator). The actual standard error estimate for a percentage from the stratified multistaged NLS sample is inflated over the standard error estimate that would have been obtained had a simple random sample of students been selected. The estimated standard errors ranged from 1.19 to 6.00 for a sample size equal to 100 and estimated percentages of 1 (or 99) to 50; and standard errors ranged from 0.08 to 0.42 for a sample size equal to 20,000 and the same estimated percentages.

Questions concerning the NLS can be directed to

Dennis Carroll
Longitudinal Studies Branch
Center for Statistics
555 New Jersey Avenue, NW.
Washington, DC 20208

High School and Beyond

High School and Beyond (HS&B) is a national longitudinal survey of 1980 high school seniors and sophomores conducted by CS. A probability sample of 1,015 high schools was selected with a target number of 36 seniors and 36 sophomores in each of the schools. A total of 58,270 students participated in the base-year survey. Substitutions were made for noncooperating schools in those strata where it was possible, but not for students. Student and parent refusals and student absences resulted in an 84 percent completion rate for students. This refers to the overall return rate of the survey and not the completion rate of each item within the survey.

Several small groups in the population were oversampled to allow for special study of certain types of schools or students. Students completed questionnaires and took a battery of cognitive tests. In addition, a sample of parents of sophomores and seniors (about 3,600 for each cohort) was surveyed.

Nonresponse can come from the 9 percent school nonresponse, a 16 percent student nonresponse, and the nonresponse rates for given items. The nonresponse rate by item for those students returning a survey range from a low of 0.3 percent (questioning if the student expects to graduate) to a high of 21 percent (concerning family income).

As part of the first followup survey of High School and Beyond, transcripts were requested in fall 1982 for an 18,152-member subsample of the sophomore cohort. Of the 15,941 transcripts actually obtained, 1,969 were excluded because the students had dropped out of school before graduation, 799 were excluded because they were incomplete, and 1,057 transcripts were excluded because either the student graduated before 1982 or the transcript indicated neither a dropout status nor graduation.

Hispanic analyses presented in this report relied on students' self identification to classify respondents as members of the various Hispanic subgroups. The classification was based on respondents' answers to the following questions: "What is your origin or descent? (If more than one, please mark below the one you consider the most important part of your background)(MARK ONE)." Under the heading Hispanic or Spanish, four possible answers were listed: (1) Mexican, Mexican-American, Chicano; (2) Cuban, Cubano; (3) Puerto-Rican, Puertorriqueno or Boricua; (4) Other Latin American, Latino, Hispanic, or Spanish descent (WRITE IN).

If questions arise concerning the High School and Beyond study, contact

Jeffrey Owings
Longitudinal Studies Branch
Center for Statistics
555 New Jersey Avenue, NW.
Washington, DC 20208

Projections of Education Statistics

Since 1964, the Center for Statistics has published *Projections of Education Statistics*. This report includes projections of key education statistics in elementary and secondary schools and institutions of higher education. These statistics include enrollments, instructional staff, graduates, and earned degrees. In addition, it contains a methodology that describes the techniques and assumptions used to prepare the various projections.

Differences between the reported and projected values are of course almost inevitable. An evaluation of past projections revealed the following:

> At the elementary and secondary level, projections of enrollment and teachers have been quite accurate. Mean absolute percentage differences for enrollment were less than 1 percent for projections from 1 to 5 years into the future, while those for teachers were less than 4 percent.
>
> At the higher education level, projections of enrollment have been fairly accurate. Mean absolute percentage differences were 5 percent or less for projections from 1 to 5 years into the future.

Since projections of time series are subject to errors from both the inherent nature of the statistics themselves and the properties of projection methodologies, users are cautioned not to place too much confidence in the numerical values of the projections. More important economic and social changes that can not be foreseen may lead to differences. Rather, projections are to be considered as indicators of broad trends.

For further information about projection methodology and accuracy, contact

Debra E. Gerald
Condition of Education Division
Center for Statistics
555 New Jersey Avenue, NW.
Washington, DC 20208

Second International Mathematics Study

The Second International Mathematics Study was organized under an association of research institutes in about 24 countries known as the International Association for Evaluation of Education Achievement (IEA). Sample surveys of two population groups were conducted during the 1981-82 school year in 20 countries. Data were collected from school administrators, teachers, and students.

Population A included all students in the grade where the majority of students had attained the age of 13.0 to 13.1 years by the middle of the school year. In all countries, school enrollment is nearly universal at that age and represents the final year of elementary school for most countries. For the United States, population A was the eighth grade. For Japan, the seventh grade was chosen for study because the cognitive mathematics tests were more appropriate for that grade level.

Population B was defined as all students who were in the terminal grade of secondary education and who were studying mathematics as a substantial part of their academic program. These students were taking at least 5 hours of mathematics classes each week. In the United States, classes of pre-calculus and calculus were chosen. These classes represented about 12 percent of the total age group. In other countries, population B represented between 6 and 50 percent of the age group.

Altogether, about 20 country educational systems participated in the population A survey and 15 systems participated in the population B survey. The sample sizes for these 35 samples ranged from 1,000 to 8,800 students.

Further information on the sampling methodology and response rates is available from:

Larry E. Suter
International Education Statistics Program
Center for Statistics
555 New Jersey Avenue, NW
Washington, DC 20208

National Institute on Drug Abuse

Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth

The National Institute on Drug Abuse of the U.S. Department of Health and Human Services is the primary supporter of the long-term study entitled "Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth," conducted at the University of Michigan Institute for Social Research. One aspect of that study deals with student drug abuse. Results of a national sample survey are published annually. Details on the survey and its methodology may be found in the publication entitled, ***Drug Use Among American High School Students, College Students, and Other Young Adults*** by Lloyd D. Johnston, Jerald G. Bachman, and Patrick M. O'Malley, available from the National Clearinghouse on Drug Abuse Information, 5600 Fishers Lane, Rockville, MD 20857.

Questions may also be directed to

Dr. Michael S. Backenheimer
National Institute on Drug Abuse
Division of Epidemiology and Statistical Analysis
5600 Fishers Lane
Rockville, MD 20857

National Science Foundation

Science Assessment and Research Project

The purpose of the 1981-82 Science Assessment and Research Project (SARP), based at the University of Minnesota and funded by the National Science Foundation, was to assess the status of science literacy among 9-, 13-, and 17-year-olds in the United States. SARP addressed two general issues: (1) What is the current status of science performance and attitudes in the United States? (2) How does the current status differ from that of previous assessments? Students answered a series of affective and cognitive questions selected from previous national assessments and those reflecting an understanding of how science affects society.

Following the procedure previously established by National Assessment of Educational Progress (NAEP), the assessment was administered to a nationally representative sample of 18,000 students in approximately 700 schools. NAEP describes this sampling plan as a deeply stratified, multistage probability sample design. Selection of content for specific test items was guided by objectives developed by NAEP in 1976-77, the focus of the SARP assessment, and the advice of a research advisory committee that included representatives from several major professional organizations.

Test items were drawn from four major classification areas: (1) Science Content, the body of scientific knowledge; (2) Inquiry, the process by which the knowledge base is derived; (3) Science, Technology, and Society, the implications of the knowledge base for mankind; and (4) Attitudes, the orientation and feeling students have toward science.

For further information, contact

Wayne W. Welch
Science Assessment and Research Project
Minnesota Research and Evaluation Center
210 Burton Hall
Minneapolis, MN 55455

2. Private Research and Professional Associations

American College Testing Program

American College Testing Program

The American College Test (ACT) Assessment is taken by college-bound high school students. The test is designed to predict how well students might perform in colleges. The ACT tests English, mathematics, social studies, and natural science. The national norms are based on a 10 percent sample of all students who wrote the ACT assessment in a given year. Those students who tested residually or who failed to list a valid high school code are not represented by these norms because they are not included in the individual reports provided to the high schools.

It should be noted that college-bound students who write the ACT assessment are not representative in some respects of college-bound students nationally. First, students who live in the Midwest, Rocky Mountains and Plains, and the South are overrepresented among ACT-tested students as compared to collegebound students nationally. Second, ACT-tested students tend to enroll in public colleges and universities more frequently than do collegebound students nationally.

State norms are prepared for every State for which 1,000 or more students completed the ACT assessment in a given year. For the reasons discussed above, these norms may not be representative of all college-bound students in a State.

For further information about the ACT assessment, contact

The American College Testing Program
2201 North Dodge Street
P.O. Box 168
Iowa City, IA 52243

College Entrance Examination Board

Preliminary Scholastic Aptitude Test and Scholastic Aptitude Test

The Admissions Testing Program of the College Board is comprised of a number of college admissions tests, including the Preliminary Scholastic Aptitude Test (PSAT) and the Scholastic Aptitude Test (SAT). High school students participate in the program as sophomores, juniors, or seniors—some more than once during these years. If they have taken the tests more than once, only the most recent information is retained for analysis. The PSAT and SAT report subscores in the areas of mathematics and verbal ability.

As with the ACT assessment, students who take the SAT are not representative of college-bound students nationally. The college entrance examination used for admissions—SAT or ACT—varies by type of institution and by region.

For further information, contact

College Entrance Examination Board
Educational Testing Service
Princeton, NJ 08541

Gallup Poll

(a) Public Attitudes Toward the Public Schools Survey

Through funding provided by the Institute for Development of Educational Activities, Incorporated (I/D/E/A), the Gallup Poll conducts annual surveys of the public's attitudes toward education. Each year the Poll interviews approximately 1,600 adults, representative of the civilian noninstitutionalized population 18 years old and over.

The sample used in the 17th annual survey was made up of a total of 1,528 respondents and is described as a modified probability sample of the Nation. Personal, in-home interviewing was conducted in all areas of the Nation and in all types of communities. The sample design included stratification by size of community region.

For more detailed information, contact

I/D/E/A—Kettering
Information and Services
P.O. Box 446
Melbourne, FL 32901

(b) The Gallup Poll of Teachers' Attitudes Toward the Public Schools

The findings of this survey come from mail interviews with a representative sample of U.S. teachers. From a list provided by Market Data Retrieval, a sample of 2,000 teachers was selected to reflect the total national population of teachers. The sample was stratified proportionately by region and by teaching level.

Questionnaires were mailed to the 2,000 teachers between 30 April and 9 May 1984. Six questionnaires were undeliverable, producing an effective mailing of 1,994 questionnaires. Of these, 813 (41%) were completed and returned.

To ensure that the attitudes of nonrespondents were not significantly different from those respondents, a telephone survey was conducted with a sample of 100 teachers who had not answered the mail survey. The results of the telephone survey showed that the sample of nonrespondents to the mail survey closely paralleled the sample of respondents—both in terms of attitudes and in terms of socioeconomic and demographic characteristics.

For more detailed information, contact

Phi Delta Kappa
P.O. Box 789
Bloomington, IN 47402

Metropolitan Life Insurance Company

Metropolitan Life Survey of the American Teacher

The 1985 *Metropolitan Life Survey of the American Teacher* was conducted by Louis Harris and Associates for Metropolitan Life Insurance Company from April 25 through June 8, 1985. A total of 1,846 telephone interviews were conducted with current public school teachers in kindergarten through grade 12 throughout all fifty States of the United States and the District of Columbia.

Louis Harris and Associates drew a random sample of current teachers from a list of 1.2 million teachers (compiled by Market Data Retrieval of Westport, Connecticut). Sample sizes for completed interviews were set for each State, based on the proportion of elementary and secondary public school classroom teachers in each State. The state sample sizes were set in line with statistics published by the U.S. Department of Education, National Center for Education Statistics.

Each selected current teacher was contacted at his or her school by a representative of Louis Harris and Associates and requested to participate in the survey. When a teacher could not be reached directly, a message was left to allow a return call (including a toll-free number). Of all the teachers who were contacted at their schools or with whom a message was left, 47 percent were willing to talk to an interviewer.

For further information, contact

Metropolitan Life Insurance Company
One Madison Avenue
New York, NY 10010

National Education Association

Estimates of School Statistics

The National Education Association (NEA) reports revenue and expenditure data in its annual publication, *Estimates of School Statistics*. Each year, NEA prepares regression-based estimates of financial and other education statistics that are submitted to the States for verification. Generally, about 30 States adjust these estimates based on their own data. These preliminary data are published by NEA along with revised data from previous years. States are asked to revise previously submitted data as final figures become available. The most recent publication contains all changes reported to the NEA.

If questions exist concerning the NEA estimates, they can be directed to

National Education Association—Research
1201 16th Street, NW.
Washington, DC 20036

Opinion Research Corporation

American Attitudes Toward Higher Education

The survey of *American Attitudes Toward Higher Education* has been conducted annually since 1982 by Opinion Research Corporation (ORC) to measure the public's views on higher education. All four studies were sponsored by the Council for Advancement and Support of Education. The 1985 study was also cosponsored by the New England Board of Higher Education.

The ORC telephone sample is a form of random-digit dialing. The sample is designed to be a self-weighting stratified random sample of telephone households in the contiguous United States. A sample of approximately 1,000 respondents was interviewed by telephone in each of the survey years.

If questions exist concerning the survey, they can be directed to

Walter Lindenmann
Opinion Research Corporation
One Penn Plaza, Suite 1632
New York, NY 10119

C. Technical Notes

Indicator 1:9—Post-high school activities of students

In constructing the activities variables two problems had to be resolved: (1) some items from the class of 1972 could not be replicated in the class of 1980, and items from the class of 1980 could not be replicated from the class of 1972; and (2) questions about the activities of seniors from the classes of 1972 and 1980 were not mutually exclusive. This technical Appendix describes how each problem was handled.

(1) Noncomparable Items: There were two comparability problems. First, some items were not consistently asked within a data set, e.g., military service, for example, might appear in the class of 1972 data set in the first year, but not in the second year. A second problem was comparability across data sets. For example, the status, "not in the labor force," can be identified in the first year out of high school for the class of 1972, but not in the first year out of high school for the class of 1980. Both problems were addressed by collapsing all noncomparable items into an "other" category. This process did not affect the results significantly because the percentages in the "other" category are quite small.

(2) Overlapping Items: For both the High School and Beyond Survey and the National Longitudinal Study, activity items were not mutually exclusive. That is, respondents could, and did, indicate that they were doing more than one thing. For example, a respondent could be going to college and working. The problem was resolved by linking work and education status, e.g., attending college and either working or not working.

A second strategy was to force the mutual exclusivity criterion on the activity items by giving highest priority to education statuses and rank ordering. The ordering is as it appears in Table 1:9. Thus responses were forced into a single activity category—the higher ranking activity.

Indicator 1:10—Literacy skills of young adults

The means for the prose, document, and quantitative scales were set equal to total group performance on the NAEP reading scale which was derived from the 1983-84 NAEP reading assessment of 9-, 13-, and 17-year-old students.[1] The total group mean for the young adults on each of the scales is 305. The criteria for selecting examples of tasks at each level were that 80 percent or more of the respondents at a given point (e.g., 250) could answer the item correctly while less than 50 percent of the respondents at the next lower level (e.g., one standard deviation lower or 200) could answer the items correctly.[2]

Definitions of the scales and examples of tasks at the three levels reported in Table 1:10 follow:

1) *NAEP reading scale*—based on multiple-choice exercises similar in content and length to traditional tests of reading achievement

Score of 200: the ability to understand specific or sequentially related information;
Score of 300: the ability to find, understand, summarize, and explain relatively complicated information;
Score of 350: the ability to synthesize and learn from specialized reading materials.

2) *Prose comprehension*—the knowledge and skills needed to gain understanding and use information from texts such as editorials, news stories, and poems

Score of 200: writing a simple description of the type of job one would like to have;
Score of 300: locating information in a news article or almanac;
Score of 350: synthesizing the main argument from a lengthy newspaper editorial.

3) *Document literacy*—the knowledge and skills required to locate and use information

Score of 200: matching money-saving coupons to a shopping list of several items;
Score of 300: following directions to travel from one location to another using a map;
Score of 350: using a bus schedule to select the appropriate bus for given departures and arrivals.

4) *Quantitative literacy*—the knowledge and skills needed to apply the arithmetic operations of addition, subtraction, multiplication, and division, either alone or sequentially

Score of 200: totaling two entries on a bank deposit slip;
Score of 300: entering deposits and checks and balancing a checkbook;
Score of 350: determining the amount of tip in a restaurant given the percentage of the bill.

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[1] National Assessment of Educational Progress, *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report No. 15-R-01), 1985.

[2] Kirsch, I., and Jungeblut, A. *Literacy: Profiles of America's Young Adults* (Report No. 16-PL-02), Princeton, NJ: National Assessment of Educational Progress, 1986.

Indicator 1:20—Test scores of teachers compared with other college graduates

In the 1985 publication, *Indicators of Education Status and Trends*, the Department of Education included an indicator on the verbal ability of teachers. The information was drawn from an analysis by Victor S. Vance and Philip L. Schlechty[1] of the Scholastic Aptitude Test (SAT) scores of National Longitudinal Survey (NLS-72) college graduates who had taken the SAT tests.[1] The indicator this year is based on a reanalysis of the NLS data Schlechty and Vance used as well as analyses of the NLS-72 cognitive test scores. In this study the population of interest consists of individuals who reported that they held noncollege teaching jobs at some time between the fall of 1976 and the fall of 1979. Of this group, a portion changed fields during that period, while another fraction did not. This analysis contrasts those teachers who began teaching after the fall of 1976 and who had changed fields by the fall of 1979 with those who began teaching after the fall of 1976 and had not changed fields as of the fall of 1979.

Several different measures of academic performance are reported. First, the verbal and total SAT scores are used. SAT scores were retrieved from the school records of study participants. Scores were not available for all of the students who took the test, however. Hence, the reported scores may not be representative of the scores of all teachers.

In addition to SAT scores, scores from the base-year NLS cognitive test battery are also used as a measure of academic ability. Among the tests included in the battery are reading, vocabulary, and mathematics. A composite score was formed as the sum of the reading, vocabulary, and mathematics scores, and a verbal score was created by adding the vocabulary and reading scores. In the CS staff analysis, the SAT data were examined for statistical significance, and the result departs from the Schlechty-Vance findings in an important respect. The conclusion now is that there are no significant differences in the average SAT performance of teachers who leave and teachers who stay in teaching. Similarly for the NLS composite scores, the differences between teachers who persist and those who leave teaching are not statistically significant.

SAT total scores for NLS respondents

SAT total score	All respondents	College graduates	Teachers who stay	Teachers who leave
Mean	942.3	1011.8	921.6	935.3
Standard error	2.9	3.9	9.0	18.8
N of cases	5,074	2,613	418	111

NLS-72 Test Scores for NLS Respondents

LS composite score	All respondents	College graduates	Teachers who stay	Teachers who leave
Mean	0.3	2.2	1.4	1.4
Standard error	0.02	0.4	.09	0.2
N of cases	13,207	3,155	608	152

NOTE: An elaboration of these findings and the methodology will appear in a forthcoming CS Bulletin. This work was carried out by Aaron M. Pallas as an employee of the Center for Statistics. He may now be contacted at the Department of Philosophy and the Social Sciences, Teachers College, Columbia University, New York, NY, 10027.

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[1] Vance, V.S. and Schlechty, P.L. "The distribution of academic ability in the teaching force: policy implications." *Phi Delta Kappan*. September 1982.

Indicator 1:28—School climate in public and Catholic high schools

The school climate indicator was derived from data drawn from a survey of teachers at High School and Beyond (HS&B) schools, conducted in 1984, with funding from the former National Institute of Education (NIE), now the Office of Research (OR) in the Department of Education's Office of Educational Research and Improvement.

The information that follows describes in detail how the climate scales described in the indicator were derived.

Survey: The data described in this report are from a survey of secondary school teachers conducted by the Consortium for the Study of Effective Schools, a group of five educational research and development centers funded by the Office of Educational Research and Improvement, U.S. Department of Education. The sample consisted of 538 secondary schools, both public and private, which participated in the High School and Beyond study. When properly weighted, the schools represent the population of 1980 U.S. high schools with 10th and/or 12th grades that were still in existence in the 1983-84 academic year.

A random sample of up to 30 teachers (defined as full-time teaching staff spending at least 50 percent of their time teaching in classrooms) was selected from each sampled school. In schools with less than 30 eligible teachers, all such teachers were included in the sample.

The response rates for both schools and teachers were quite high. Of the schools selected for the study, 90 percent agreed to participate. In the participating schools, 85.8 percent of the teachers sampled completed questionnaires.

The teacher questionnaire consisted of 10 pages of questions covering teacher attitudes, classroom and other teaching activities, school characteristics, and background information. Although not every teacher responded to every question, 10,382 teachers completed at least 50 percent of the questionnaire.

Methodology: The scales used in this analysis derive from a data reduction procedure involving factor analysis and item analyses. The first step involved selection of a suitable set of items from the teacher questionnaire. A pool of 60 items, representing teacher reports of their influence over school and classroom practices, their perceptions of the school environment, their attitudes toward teaching and the school, and their reports of classroom practices, was selected.

The pool of 60 items was subjected to a principal components analysis with varimax rotation. Although 13 eigenvalues of the correlation matrix exceeded unity, only 8 factors were extracted. The eight extracted factors represented 43.5 percent of the total variance in the correlation matrix. Items were retained for further analysis on the basis of the rotated factor pattern. Items with factor loadings greater than .40 in absolute value were kept, while items with factor loadings less than or equal to .40 in absolute value were discarded.

The first factor, labeled principal leadership, comprised 14 items with factor loadings greater than the threshold of .40. The second factor, labeled student behavior, had 10 items. The third factor, staff cooperation, included eight items with sufficiently high loadings on the factor. The fourth factor, teacher influence over school policy, comprised four items. The fifth factor was conceptually quite similar to the fourth. Labeled teacher influence over classroom practices, the factor had five items with loadings exceeding .40. The sixth factor, teacher morale, included four items. The seventh factor, academic orientation, consisted of three items. The eighth factor, teacher responsibility for school-wide discipline, had just two items with factor loadings greater than .40.

Based on the similarity in content of the items in factors four and five, these items were combined to form a single factor, labeled teacher influence over school and classroom policy. The sets of items loading on each factor were summed to form scales. Homogeneity reliability procedures (i.e., Cronbach's alpha) were then employed to select the subset of items loading on each factor that scaled best. Unit weighting of items was used throughout. A stepwise procedure, deleting one at a time items whose presence lowered the scale reliability, was used. Items were pruned until the deletion of any item from a scale lowered the scale reliability.

As a result of the item pruning, the teacher responsibility for school discipline and academic orientation scales each were left with two items. Within both of these scales the items did not correlate very highly, and the items in the academic orientation scale appeared to be tapping different constructs. Hence, these two scales were discarded from further analyses.

The resulting scales had moderate reliabilities that were generally suitable for the intended analyses, especially given the ad hoc item pool. The principal leadership scale, which consisted of 14 items, had an alpha reliability of .92. The teacher control over school and classroom policy scale, comprised of nine items, had an alpha reliability of .80. Staff cooperation, an eight item scale, had a reliability of .84. The seven-item student behavior scale had an alpha reliability of .77. The teacher morale scale, consisting of four items, had an alpha reliability of .67.

For ease of presentation all of the items in each scale were dichotomized into categories representing positive or negative judgments about the school climate attributes. A teacher's response to each question may represent either a positive or negative judgment about the climate. For instance, agreeing with the Teacher Morale item "I usually look forward to each working day at school" suggests a positive climate, while disagreeing suggests a negative climate. The cutting points for positive or negative climates were not established by the data, but rather had to be imposed by the investigator. While the cutting points for positive and negative are subjective, for most items there probably is broad agreement about which responses indicate a positive climate and which do not. The responses to each item in each scale were thus scored as either positive or negative, based on judgments about what constitutes a positive response. These judgments are reproduced below, along with the item wording.

Once a value for each item in the scales was established, the next task was to assign a positive or negative value to the scales. It probably is too rigid a criterion to demand that *all* items in a scale have positive values for the scale to be scored positively; at the same time, however, a positive climate scale should represent predominantly positive responses. Hence, a climate scale is deemed positive if at least two-thirds of the items in the scale have positive responses.

All analyses were conducted both with the simplified scale scoring and with the scales in their original metrics. The results and implications were virtually identical, regardless of which scale scoring scheme was used. The item wording and scoring of the scale items appear below.

Principal Leadership Scale

Response categories for all items range from 1 (strongly disagree) to 6 (strongly agree). For the first 12 items, categories 4 through 6 were judged positive, while categories 1 through 3 were judged negative.

> The principal deals effectively with pressures from outside the school that might interfere with my teaching.
>
> The principal sets priorities, makes plans, and sees that they are carried out.
>
> Goals and priorities for the school are clear.
>
> Staff members are recognized for a job well done.
>
> Staff are involved in making decisions that affect them.
>
> The principal knows what kind of school he/she wants and has communicated it to the staff.
>
> This school's administration knows the problems faced by the staff.
>
> In this school I am encouraged to experiment with my teaching.
>
> The school administration's behavior toward the staff is supportive and encouraging.
>
> In this school the teachers and the administration are in close agreement on school discipline policy.
>
> The principal lets staff members know what is expected of them.
>
> The principal is interested in innovation and new ideas.

For the last two items, categories 1 through 3 were judged positive, while categories 4 through 6 were judged negative.

> The principal does a poor job of getting resources for this school.
>
> The principal seldom consults with staff members before he/she makes decisions that affect us.

Staff Cooperation Scale

Response categories for all the items range from 1 (strongly disagree) to 6 (strongly agree). Categories 4 through 6 were judged positive, while categories 1 through 3 were judged negative for the first seven items.

> You can count on most staff members to help out anywhere, anytime—even though it may not be part of their official assignment.
>
> Most of my colleagues share my beliefs and values about what the central mission of the school should be.
>
> I feel accepted and respected as a colleague by most staff members.
>
> Teachers in this school are continually learning and seeking new ideas.
>
> There is a great deal of cooperative effort among staff members.
>
> Staff members maintain high standards of performance for themselves.
>
> This school seems like a big family; everyone is so close and cordial.

For the last item (on school spirit), categories 1 through 3 were judged positive, while categories 4 through 6 were judged negative.

> Staff members in this school generally don't have much school spirit.

Teacher Control Scale

Response categories range from 1 (none) to 6 (a great deal for the first groups of items on school policy; complete control for second group of items on classroom control). Categories 4 through 6 were judged positive, while categories 1 through 3 were judged negative.

> How much influence do teachers have over school policy in each of the areas below?
>
> > Determining student behavior codes
> >
> > Determining the content of inservice programs
> >
> > Setting policy on grouping students in classes by ability
> >
> > Establishing the school curriculum
>
> Using the scale provided, how much control do you feel you have *in your classroom* over each of the following areas of your planning and teaching?
>
> > Selecting textbooks and other instructional materials
> >
> > Selecting content, topics, and skills to be taught
> >
> > Selecting teaching techniques
> >
> > Disciplining students
> >
> > Determining the amount of homework to be assigned

Teacher Morale Scale

Response categories for the first two items range from 1 (strongly disagree) to 6 (strongly agree). Categories 4 through 6 were judged positive, while categories 1 through 3 were judged negative for the first item. For the second item categories 1 through 3 were judged positive, and categories 4 to 6 were judged negative.

> I usually look forward to each working day at school.
>
> I sometimes feel it is a waste of time to try to do my best as a teacher.

For the third item, the response categories "very successful" and "moderately successful" were judged positive, while the categories "slightly successful" and "not successful" were judged negative.

> To what extent do you feel successful in providing the kind of education you would like to provide for most of your students?

For the fourth item, the response categories "all the time" and "most of the time" were judged positive, while the categories "some of the time" and "almost never" were judged negative.

> How much of the time do you feel satisfied with your job in this school?

Student Behavior Scale

Response categories for the following items range from 1 (strongly disagree) to 6 (strongly agree). Categories 1 through 3 were judged positive, while categories 4 through 6 were judged negative.

> The learning environment in this school is not conducive to school achievement for most students.
>
> The level of student misbehavior (e.g., noise, horseplay, or fighting in the halls, cafeteria, or student lounge) and/or drug or alcohol use in this school interferes with my teaching.
>
> The amount of student tardiness and class cutting in this school interferes with my teaching.
>
> The attitudes and habits my students bring to my class greatly reduce their chances for academic success.

For the next item, the response categories "never," "less than once a day," and "1-3 times" were judged positive, while the categories "4-6 times," "7-14 times," and "15 or more times" were judged negative.

> On an average day, how often are the classes you teach interrupted (e.g., by announcements, messengers from the office, students coming in tardy, noise in hallway, etc.)?

Responses of less than or equal to 5 percent on the following items were judged positive, while responses of greater than 5 percent of class time were judged negative.

> On the average, about what percentage of your classes' time is spent in getting students to behave?
>
> During the time devoted to instruction and practicing skills, at any given time, what percentage of the students is whispering, fooling around, appears to be daydreaming, or is not working on the assigned task?

The school climate indicator was prepared by Aaron M. Pallas when an employee of the Center for Statistics. He may now be contacted at the Department of Philosophy and the Social Sciences, Teachers College, Columbia University, New York, NY, 10027.

Indicator 2:1—College student achievement: A selected profile

The Office of Research (OR) in the Office for Educational Research and Improvement (OERI) has analyzed changes over two decades in performance on graduate and professional school admissions tests. In the analysis, change is measured against the mean standard deviation for a specific time period. Standard deviation units are a far more accurate way of measuring change in performance over time for these tests than either scores or percentages, principally because (a) no two of these examinations have the same scales, and (b) the standard deviation accounts for the different ranges in scores among the many groups of students who took these examinations over a long period of time.

The four major college graduate examinations with a national data base examined are these: the Law School Admissions Test (LSAT), the Medical College Admissions Test (MCAT), the Graduate Management Admissions Test (GMAT), and the Graduate Record Examination (GRE). While the combination of those taking the LSAT, the MCAT, and the GMAT is greater in number, the GRE scores are more reliable historical measures of student achievement. The GRE battery has remained fairly constant in content and skills coverage, and unlike the LSAT or MCAT, the scales of the various GRE examinations have not undergone radical alteration since their introduction.

However, while the GRE is the best historical measure, there are several aspects of the GRE which make it an imperfect measure of overall college outcomes. These aspects include the following:

> Sampling biases: Less than 15 percent of college graduates in any year take the GRE. Those who take them usually plan to attend graduate schools that require or recommend the GRE as part of the admissions application. Others take them as part of their application for specific fellowships. This is a self-selected sample and as such, its scores on a test of general verbal, quantitative, and analytical skills will not reflect the overall quality of undergraduate learning in the United States.
>
> Test content: The GRE General Examinations measure "general learned abilities" such as reading comprehension, quantitative reasoning, and problem-solving. Colleges teach—and students

learn—a great deal more than this, specific disciplinary content, for example. Colleges also seek to foster the development of other general learned abilities, such as how to synthesize information and how to be creative, which are not tested in the General Examinations. Thus the results of the GRE do not reflect the full range of student learning in U.S. colleges and universities.

Real gains: The GRE scores do not indicate the extent to which students have improved their general learned abilities between their entrance to and graduation from college. Since the scores of seniors are not statistically controlled by measures of their ability as freshmen, no conclusions can be made about the quality of education that has taken place during the period of their enrollment in college.

Those interested in further information may refer to the Office of Research publication, *The Standardized Test Scores of College Graduates, 1964-1982*, 1985, or contact

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Indicator 2:3—Economic outcomes of higher education

This indicator was calculated from data collected in the Current Population Survey by the Bureau of the Census. The following section provides some background on divergent views associated with interpreting the data.

In the view of some researchers, one problem with correlating economic benefits and educational attainment is the isolation of the effects of educational attainment from the effects of ability and family background. Estimates of the impact of these two variables range from claims that they can explain at best 20 percent of the earning differentials by educational level (Becker, 1964) to the claim that family background is the single major factor determining earnings (Bowles and Gintis, 1976).

Other criticisms are related to what some have called the "screening effect" of higher education. A major economic outcome of obtaining a college degree, claim some researchers, is its labeling or credentialing consequences. Differences in earnings might arise, other things being equal, not only because higher education imparts useful knowledge to workers, but also because employers use educational attainment as a convenient screening device for filtering persons into specific jobs. According to this theory, higher educational attainment results in a worker's being directed into higher paying jobs, regardless of potential productivity level. While conceding that credentialing may give college-educated people an advantage in the labor market, other researchers say that the amount of advantage can be exaggerated (Douglass, 1977). One view asserts that employers are too adroit to settle for a credential alone when selecting among potential employees (Blaug, 1976).

While some critics of a direct correlation between income levels and educational levels argue that the real relationship is somewhat lower than it appears when the effects of ability and family background are taken into account, others assert that the real relationship may be somewhat *higher* than the direct correlation between income and educational level shows. Fringe benefits that are not included in median yearly income typically increase with higher levels of income. Some estimates show earnings to be underestimated by one-fifth when paid vacations and holidays alone are not included (Pscharopoulos, 1975).

As with income, opinions differ on the causal relationship between educational attainment and unemployment rates. Again, ability and family background are seen as major determining factors in finding and holding a job. Also, the relative stability of employment for educated people is attributed in part to the fact that white collar workers generally do not feel the impact of economic dislocations as strongly as other workers in the economy. The very jobs for which a college degree "screens" are those jobs that display the fewest effects of economic slowdowns (Bowen, 1977).

Becker, G., *Human capital*. New York: National Bureau of Economic Research, 1964.

Blaug, M., The empirical status of human capital theory: A slightly jaundiced view. *Journal of Economic Literature*. 1976.

Bowen, H., *Investment in learning*. Washington, DC: 1977.

Bowles, S., and Gintis, H., *Schooling in capitalist America*. New York: Praeger, 1976.

Douglass, G.K., Economic returns on investments in higher education. In Bowen, H., *Investment in learning* (pp. 359-387). 1977.

Pscharopoulos, G., College quality as a screening device. *Journal of Human Resources*. 1975.

Standard Error Tables

The accuracy of any data is determined by the joint effects of sampling and nonsampling errors. Estimates based on a sample will differ somewhat from the figures that would have been obtained if a complete census had been taken using the same survey instruments, instructions, and procedures. The resulting differences are called sampling errors or sampling variability. In addition, all surveys, both universe and sample, are subject to design, reporting, and processing errors, and errors due to nonresponse. To the extent possible, these nonsampling errors are kept to a minimum by methods built into the survey procedures. In general, however, the effects of nonsampling errors are more difficult to assess than those produced by sampling variability.

The standard error is the primary measure of sampling variability. The chances are about 68 out of 100 that an estimate from the sample will differ from a complete census by less than the standard error. The chances are about 90 out of 100 that the difference would be less than 1.65 times the standard error; about 95 out 100 that the difference would be less than 1.96 times the standard error; and about 99 out of 100 that it would be less than 2.5 times as large. Thus, the standard error provides a specific range with a stated confidence within which a given parameter would lie if a complete census had been conducted.

To illustrate this further, consider Table D1 for estimates of standard errors from NAEP reading assessments. For an estimate of 58.3 percent of 9-year-olds reading at the basic level or higher on the 1971 reading assessment, the table shows a standard error of 1.1 percent. This means that the chances are about 95 out of 100 that the 58.3 percent estimate is within + *or* − 1.96 × 1.1 percent of the percent that would result from a complete census. Therefore, the 95 percent confidence interval is 56.1 to 60.5.

A similar statement can be made concerning an estimated difference. The standard error of a difference between two sample estimates is approximately equal to the square root of the sum of the squared standard errors of the estimates. The exact standard error of a difference, a-b, is in fact:

$$s.e._{a-b} = \pm \sqrt{s.e._a^2 + s.e._b^2 - 2s.e._{ab}}$$

All comparisons cited in the text are statistically significant at the 0.05 level of significance. This means that the difference between two sample estimates is greater than 1.96 times the standard error of the difference.

The preceding discussion on sampling variability was directed toward a situation concerning one or two estimates. A more difficult situation is encountered when determining the accuracy of statistical projections. In general, the farther away from the actual data being used for the projections, the greater the variability in the projection. That is, if annual data from 1970 to 1984 are being used to project enrollment in elementary and secondary schools, the farther away from 1984 one gets, the more variability there is in the projection. One is less sure of the 1994 projection of enrollment in elementary and secondary schools than the 1986 projection. A detailed discussion of the projections methodology is contained in *Projections of Education Statistics to 1992-93*, published by the Center for Statistics, U.S. Department of Education (1985).

Table D1

Standard errors for percentage of 9-, 13-, and 17-year-old students at or above the five reading proficiency levels: 1971 to 1984 (Indicator 1:1)

Reading level	Age	1971	1975	1980	1984
Rudimentary (150)	9	0.5	0.3	0.4	0.4
	13	0.1	0.1	0.0	0.0
	17	—	—	—	—
Basic (200)	9	1.1	0.8	1.0	0.9
	13	0.5	0.4	0.5	0.3
	17	0.3	0.2	0.3	0.1
Intermediate (250)	9	0.6	0.4	0.8	0.6
	13	1.3	1.0	1.1	0.8
	17	0.9	0.6	0.9	0.7
Adept (300)	9	0.1	0.1	0.1	0.1
	13	0.5	0.4	0.5	0.4
	17	1.1	0.7	1.2	0.8
Advanced (350)	9	—	—	—	—
	13	—	—	—	—
	17	0.3	0.2	0.3	0.2

—Standard errors not reported when the proportion of students is either greater than 95 percent or less than 5 percent.

SOURCE: National Assessment of Educational Progress, *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report No. 15–R–01), 1985.

Table D2

Standard errors for average reading proficiency of white, black, and Hispanic students: 1971 to 1984 (Indicator 1:2)

Age and race/ethnicity	1971	1975	1980	1984
Age 9				
White	1.1	0.7	0.9	0.8
Black	1.8	1.2	1.4	1.1
Hispanic	—	[1]2.2	[1]2.1	[1]1.3
Age 13				
White	0.9	0.7	0.7	0.5
Black	1.3	1.2	1.4	1.1
Hispanic	—	[1]3.0	[1]2.3	[1]1.7
Age 17				
White	1.0	0.6	0.9	0.7
Black	1.6	1.7	1.8	1.2
Hispanic	—	[1]2.9	[1]2.6	[1]1.9

—Hispanics were included in the white category in 1971.

[1] Estimates for Hispanics should be interpreted with caution; standard errors are poorly estimated due to small sample size.

SOURCE: National Assessment of Educational Progress, *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report No. 15–R–01), 1985.

Table D3

Standard errors for average mathematics and science performance of 9-, 13-, and 17-year-olds: 1970 to 1982 (Indicator 1:3)

Age and subject									
Mathematics	1973	1978	Change	1978	1982	Change			
9	—	—	0.7	—	—	(1)			
13	—	—	1.0	—	—	(2)			
17	—	—	0.7	—	—	(1)			
Science	1970	1973	Change	1973	1977	Change	1977	1982	Change
9	0.4	0.4	0.6	0.4	0.4	0.6	(3)	(3)	(3)
13	0.4	0.5	0.6	0.4	0.4	0.6	—	—	0.8
17	0.3	0.3	0.5	0.4	0.4	0.6	—	—	0.8

—Standard error not available.

[1] Standard error not available; change not significant at 95 percent level.

[2] Standard error not available; change significant at 95 percent level.

[3] Data from the Science Assessment and Research Project for the 1982 science assessment is not included for 9-year-olds because change for total content items was not reported.

SOURCES: National Assessment of Educational Progress, *Mathematical Technical Reports: Summary Volume*, 1980. National Assessment of Educational Progress. *The Third National Mathematics Assessment: Results, Trends and Issues* (Report No. 13–MA–01), 1983. National Assessment of Educational Progress *Three National Assessments of Science: Changes in Achievement*, 1969–77 (Report No. 08–S–00), 1978. Science Assessment and Research Project, *Images of Science, A Summary of Results from the 1981–82 National Assessment in Science*, 1983.

Table D4

Standard errors for high school graduates by race, Hispanic origin, and age: 1974 to 1985 (Indicator 1:8)

Year	Age: 18–19				Age: 20–24			
	Total	White	Black	Hispanic	Total	White	Black	Hispanic
1985	0.8	0.8	2.4	4.1	0.4	0.4	1.2	2.3
1984	0.8	0.8	2.4	4.1	0.4	0.4	1.2	2.5
1983	0.7	0.8	2.2	3.8	0.4	0.4	1.2	2.4
1982	0.7	0.8	2.2	3.7	0.4	1.2	1.2	2.4
1981	0.7	0.7	2.2	3.7	0.4	0.4	1.3	2.4
1980	0.7	0.7	2.5	4.0	0.4	0.4	1.5	2.6
1979	0.7	0.7	2.3	4.1	0.4	0.4	1.4	2.6
1978	0.7	0.7	2.3	4.2	0.4	0.4	1.4	2.6
1977	0.7	0.7	2.3	4.0	0.4	0.4	1.4	2.8
1976	0.7	0.7	2.3	4.0	0.4	0.4	1.4	2.8
1975	0.7	0.7	2.3	4.2	0.4	0.4	1.5	2.9
1974	0.7	0.7	2.4	4.2	0.4	0.4	1.5	2.8

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Population Characteristics, Series P–20, *School Enrollment—Social and Economic Characteristics of Students: October*, various years. Current Population Surveys (unpublished tabulations).

Table D5

Standard errors for post-high school activities of students (Indicator 1:9)

Activity	Year after high school			
Class of 1972	First	Second	Third	Fourth
Enrolled in 4-year college, and did not work	0.3	0.3	0.3	0.2
Enrolled in 4-year college, and worked	0.2	0.2	0.3	0.2
Enrolled in 2-year college, and did not work	0.2	0.2	0.1	0.3
Enrolled in 2-year college, and worked	0.2	0.2	0.2	0.3
Enrolled in vocational-technical school, and did not work	0.2	0.1	0.1	0.3
Enrolled in vocational-technical school, and worked	0.1	0.1	0.1	0.3
Other study	0.1	0.1	0.1	0.3
Worked full-time, did not study	0.4	0.4	0.4	0.2
Worked part-time, did not study	0.2	0.2	0.2	0.3
Other	0.3	0.3	0.3	0.3
Class of 1980				
Enrolled in 4-year college, and did not work	0.5	0.4	0.4	0.4
Enrolled in 4-year college, and worked	0.4	0.4	0.4	0.5
Enrolled in 2-year college, and did not work	0.3	0.2	0.2	0.2
Enrolled in 2-year college, and worked	0.4	0.4	0.3	0.3
Enrolled in vocational-technical school, and did not work	0.2	0.2	0.1	0.1
Enrolled in vocational-technical school, and worked	0.2	0.2	0.1	0.1
Other study	0.2	0.2	0.1	0.1
Worked full-time, did not study	0.5	0.5	0.6	0.6
Worked part-time, did not study	0.4	0.4	0.3	0.3
Other	0.3	0.3	0.4	0.4

SOURCES: U.S. Department of Education, Center for Statistics, National Longitudinal Study (unpublished tabulations); High School and Beyond (unpublished tabulations).

Table D6

Standard errors for percentage of young adults at or above three levels of difficulty on the prose scale, document scale, quantitative scale, and NAEP reading scale, by educational attainment: 1985 (Indicator 1:10)

Scale score and educational attainment	Prose scale	Document scale	Quantitative scale	NAEP reading scale
Score of 200				Basic
Total	0.5	0.5	0.4	0.4
Less than high school	8.7	7.7	5.9	8.0
Some high school	1.9	2.7	2.0	1.7
High school graduate, some postsecondary	0.6	0.5	0.5	0.6
2-year, 4-year degree or more	0.2	0.2	0.1	0.1
Score of 300				Adept
Total	1.5	1.7	1.4	1.6
Less than high school	9.5	9.6	4.5	4.8
Some high school	2.8	2.9	2.7	2.5
High school graduate, some postsecondary	1.7	2.1	1.9	1.6
2-year, 4-year degree or more	1.3	1.5	1.6	2.1
Score of 350				Advanced
Total	1.1	1.3	1.4	1.4
Less than high school	0.0	0.7	4.0	0.0
Some high school	1.5	0.5	0.8	1.0
High school graduate, some postsecondary	1.3	1.3	1.3	1.3
2-year, 4-year degree or more	2.0	1.9	2.3	2.6

SOURCES: Kirsch, I. and Jungeblut, A. *Literacy: Profiles of America's Young Adults* (Report No. 16–PL–02) Princeton, NJ: National Assessment of Educational Progress, 1986. National Assessment of Educational Progress, Young Adult Literacy, 1985, unpublished data.

Table D7

Standard errors for postsecondary enrollment and completion rates for 1980 high school graduates, by control of high school (Indicator 1:12)

	High school type	
	Public	Private
For percentage of 1980 high school graduates who enrolled in postsecondary education in October 1980, by type of postsecondary school		
Any postsecondary institution	0.9	2.3
4-year	0.8	2.5
2-year	0.6	1.8
Vocational/technical	1.1	3.4
For percentages of 1980 high school graduates who had enrolled in postsecondary education by February 1984, by type of postsecondary school		
Any postsecondary program	0.8	1.8
4-year	0.8	2.2
2-year	0.8	2.1
Vocational/technical	1.4	1.5
For percentages of 1980 high school graduates who entered a postsecondary institution and subsequently earned a certificate, license, or degree as of summer 1984		
Any certificate/degree	0.8	2.4
BA/BS degree	0.8	2.3
AA degree	0.7	1.7
License	0.6	1.5
Certificate	0.8	1.9

SOURCE: U.S. Department of Education, Center for Statistics, High School and Beyond, 1985.

Table D8

Standard errors for test scores of teachers and all college graduates (Indicator 1:20)

Performance measure	Teachers who stay	Teachers who leave	All college graduates
SAT (total)	3.9	9.0	2.9
NLS (total test)	.09	.17	.04

SOURCE: U.S. Department of Education, Center for Statistics, National Longitudinal Study of the High School Class of 1972, unpublished tabulations.

Table D9

Standard errors for school enrollment rates by selected age groups (Indicator 1:23)

Year	Age		
	3–4	5–6	16–17
1985	0.9	0.3	0.5
1984	0.9	0.4	0.5
1983	0.8	0.4	0.5
1982	0.8	0.4	0.5
1981	0.8	0.4	0.5
1980	0.9	0.4	0.5
1979	0.9	0.4	0.5
1978	0.9	0.4	0.5
1977	0.9	0.3	0.5
1976	0.8	0.4	0.5
1975	0.8	0.4	0.5
1974	0.8	0.4	0.5

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P–20 (various years), and unpublished tabulations.

Table D10

Standard errors for average reading proficiency of 9-, 13-, and 17-year-old students, by reading materials in the home and television viewing: 1984 (Indicator 1:25)

Age	Hours of television watched per day	Reading materials in the home	
		Few	Many
9	0–2	2.4	1.9
	6+	1.9	2.3
13	0–2	2.9	1.2
	6+	3.2	2.4
17	0–2	2.5	0.9
	6+	4.7	3.5

SOURCE: 1983–84 National Assessment of Educational Progress in Reading (Center for Statistics calculations).

Table D11

Standard errors for incidence of student infractions in public secondary schools in 1983–84, by selected school characteristics (Indicator 1:26)

School characteristic	Student caught selling illegal drugs at school		Theft of personal item over $10 value reported by student		Law violation reported by school authorities	
	Percent of schools	Incidence per 100 students[1]	Percent of schools	Incidence per 100 students[1]	Percent of schools	Incidence per 100 students[1]
Total	1.9	.03	1.7	.09	1.9	.07
Grade level[2]						
Senior high	2.3	—	—	.13	—	—
Junior high	2.9	—	—	.06	—	—
School size						
Less than 400	—	—	4.3	.24	4.5	.20
400–999	—	—	—	—	—	.06
1000 or more	—	—	1.6	.08	2.2	.05
Metropolitan status						
Rural	—	.02	3.4	—	2.9	.40
Suburban	—	—	—	—	—	.07
Urban	—	.18	3.1	—	3.1	.08

—Not available.

[1] Based on all schools including those that reported no occurrences.

[2] Some schools have both elementary and secondary grades. These schools are not listed separately because their number is small; they are included in the total and in analyses with other school characteristics.

SOURCE: U.S. Department of Education, Center for Statistics, Fast Response Survey System, Survey of School Discipline Policies and Practices, 1985.

Table D12

Standard errors for school climate in public and Catholic high schools: 1984 (Indicator 1:28)

Components of climate	Public school teachers	Catholic school teachers
Principal leadership	0.5	2.0
Staff cooperation	0.5	1.9
Student behavior	0.5	1.8
Teacher control over school and classroom policy	0.5	1.6
Teacher morale	0.5	1.4

SOURCE: U.S. Department of Education, National Institute of Education, Consortium for the Study of Effective Schools, High School and Beyond Administrator and Teacher Survey, 1984.

Table D13

Sampling tolerances for percentage of teachers satisfied with teaching as a career: 1985 (Indicator 1:29)

	Very satisfied	Somewhat satisfied	Somewhat dissatisfied	Very dissatisfied
All in all, how satisfied would you say you are with teaching as a career—very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?				
Total	2	2	2	1
Region				
East	2	2	2	1
Midwest	2	2	2	1
South	2	2	2	1
West	2	2	2	1
Size of place				
Inner city	2	2	2	1
Other urban	2	2	2	1
Suburb	2	2	2	1
Small town	2	2	2	1
Rural	2	2	2	1
Level of school				
Elementary	2	2	1	1
Junior high	2	2	2	1
High school	2	2	2	1
Sex				
Male	2	2	2	1
Female	2	2	2	1

SOURCE: Metropolitan Life Insurance Company and Louis Harris and Associates, *The American Teacher, 1985*, 1985.

Table D14

Sampling tolerances for percentages from Gallup Polls (Indicators 1:30, 1:31, 1:32)

	Recommended allowance for sampling error of a percentage						
	Size of sample						
	1500	1000	750	600	400	200	100
	In percentage points (at 95 in 100 confidence)						
Percentages near 10 ...	2	2	3	4	4	5	7
Percentages near 20 ...	2	3	4	4	5	7	9
Percentages near 30 ...	3	4	4	5	6	8	10
Percentages near 40 ...	3	4	4	5	6	9	11
Percentages near 50 ...	3	4	4	5	6	9	11
Percentages near 60 ...	3	4	4	5	6	9	11
Percentages near 70 ...	3	4	4	5	6	8	10
Percentages near 80 ...	2	3	4	4	5	7	9
Percentages near 90 ...	2	2	3	4	4	5	7

	Recommended allowance for sampling error of the difference			
	Size of sample			
Size of sample	750	600	400	200
	In percentage points (at 95 in 100 confidence)			
	Percentages near 20 or percentages near 80			
750	5	6	7	8
600	6	6	7	8
400	7	7	7	9
200	8	8	9	10
	Percentages near 50			
750	6	8	8	10
600	8	8	8	11
400	8	8	9	11
200	10	11	11	11

SOURCE: *Phi Delta Kappan*, The Gallup Poll of Teachers' Attitudes Toward the Public Schools, October 1984 and January 1985 and the 17th annual Gallup Poll of the Public's Attitudes Toward Education, September 1985.

Table D15

Standard errors for ratio of income of full-time male workers by educational attainment: 1970 to 1983 (Indicator 2:3)

Year	Income ratios		
	1–3 years of college to 4 years of high school	4 years of college to 4 years of high school	5 or more years of college to 4 years of high school
1970	0.02	0.02	0.02
1971	0.02	0.02	0.02
1972	0.02	0.02	0.02
1973	0.01	0.02	0.02
1974	0.01	0.02	0.02
1975	0.02	0.02	0.02
1976	0.01	0.02	0.02
1977	0.01	0.02	0.02
1978	0.01	0.02	0.02
1979	0.01	0.02	0.02
1980	0.01	0.02	0.02
1981	0.01	0.02	0.02
1982	0.02	0.02	0.02
1983	0.02	0.02	0.02

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P–60, *Money Income of Families and Persons in the United States*, various years (Center for Statistics calculations).

D16

Standard errors for percentage of students 25 years old or older enrolled in a higher education institution (Indicator 2:8)

Year[1]	Percent of students 25-years-old or older
1972	0.67
1973	0.68
1974	0.67
1975	0.64
1976	0.63
1977	0.63
1978	0.64
1979	0.64
1980	0.68
1981	0.66
1982	0.66
1983	0.66
1984	0.66
1985	0.66

[1] Years 1972 to 1980 are controlled to the 1970 census base. Years 1981 to 1984 are controlled to the 1980 census base.

NOTE: Standard error estimates are calculated using the following formula:

s.e. = / (b/xp(100 – p)

where:
b = parameter associated with those 14 to 34 years old.
x = the size of the subclass of the population which is the base of the percent.
p = the percent of the sample 25 years old or older.

For the standard errors presented here, the value of b used was that for students 14 to 34 years old since no value for b has been estimated by the Census for the age group of 14 and older. For years prior to 1980, b was multiplied by 0.871. See page 13 of the source cited for more detailed information.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Report, Series P–20, No. 404, *School Enrollment—Social and Economic Characteristics of Students: October 1984*, 1985.

Table D17

Standard errors for participation rates of 18- to 24-year-olds in higher education by race/ethnicity: 1970 to 1985 (Indicator 2:9)

Year	Racial/ethnic group		
	White	Black	Hispanic
1970	0.5	1.1	—
1971	0.4	1.1	—
1972	0.4	1.1	1.4
1973	0.4	1.0	1.4
1974	0.4	1.0	1.5
1975	0.4	1.1	1.6
1976	0.4	1.1	1.5
1977	0.4	1.1	1.4
1978	0.4	1.0	1.3
1979	0.4	1.0	1.3
1980	0.4	1.1	1.3
1981	0.4	1.2	1.3
1982	0.4	1.0	1.4
1983	0.4	1.0	1.4
1984	0.4	1.0	1.3
1985	0.5	1.0	1.4

—Not available.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *School Enrollment*, Series (P–20), various years (Center for Statistics calculations).

Table D18

Standard errors for public opinion of the overall quality of a college education in the United States: 1982 to 1985 (Indicator 2:10)

	1982	1983	1984	1985
Rating of the quality of a college education				
Excellent	2	2	2	2
Good	3	3	3	3
Fair	3	2	2	3
Poor	1	1	1	1
Don't know/no opinion	2	2	2	1
Trend in quality of a college education				
Generally improving, getting better	3	3	3	3
Staying about the same, not really changing	3	3	3	3
Generally declining, getting worse	3	2	2	2
Don't know/no opinion	2	2	2	1

SOURCE: Opinion Research Corporation, *American Attitudes Toward Higher Education—1985*, 1985 (Center for Statistics calculations)

Table D19

Standard errors for average reading performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1971 to 1984 (Table A1)

9-year-olds	1971	1975	1980	1984
Total	1.1	0.7	1.1	0.9
Sex				
Male	1.2	0.9	1.2	1.0
Female	1.2	0.8	1.1	0.9
Observed ethnicity/race				
White[1]	1.1	0.7	0.9	0.8
Black	1.8	1.2	1.4	1.1
Hispanic	—	[2]2.2	[2]2.1	[2]1.3
Region				
Northeast	—	1.3	2.3	1.9
Southeast	—	1.1	2.2	2.2
Central	—	1.2	1.4	1.5
West	—	2.0	2.0	1.7
Parental education				
Not graduated high school	1.3	1.1	1.4	1.3
Graduated high school	1.2	0.8	1.2	1.0
Post high school	1.4	0.9	1.1	1.1
Size/type of communtiy				
Rural	[2]3.2	[2]2.3	[2]1.6	[2]2.7
Disadvantaged urban	2.9	2.5	1.9	1.7
Advantaged urban	1.9	1.6	[2]1.7	1.4
Reading materials in the home				
0–2 items	1.2	0.9	1.2	0.8
3 items	1.1	0.7	1.0	0.9
4 items	1.0	0.7	1.0	1.0
Television watched per day				
0–2 hours	—	—	1.1	1.2
3–5 hours	—	—	0.8	0.9
6 hours or more	—	—	1.0	1.0

Table D19

Standard errors for average reading performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1971 to 1984, continued

13-year-olds	1971	1975	1980	1984
Total	1.1	0.8	0.9	0.6
Sex				
Male	1.1	0.8	1.1	0.7
Female	1.1	0.9	0.9	0.7
Observed ethnicity/race				
White[1]	0.9	0.7	0.7	0.5
Black	1.3	1.2	1.4	1.1
Hispanic	—	[2]3.0	[2]2.3	[2]1.7
Region				
Northeast	—	1.8	1.7	0.6
Southeast	—	1.5	1.7	1.6
Central	—	1.3	1.7	1.1
West	—	1.5	2.1	1.4
Parental education				
Not graduated high school	1.3	1.2	1.3	1.0
Graduated high school	0.8	0.7	0.8	0.7
Post high school	1.0	0.7	0.8	0.7
Size/type of community				
Rural	[2]2.4	[2]1.9	[2]2.3	[2]1.6
Disadvantaged urban	[2]2.6	[2]2.7	[2]3.9	[2]2.0
Advantaged urban	[2]1.8	[2]1.3	[2]1.5	[2]1.9
Reading material in the home				
0–2 items	1.4	1.2	1.5	1.0
3 items	1.0	0.8	1.0	0.7
4 items	0.9	0.7	0.7	0.6
Television watched per day				
0–2 hours	—	—	0.9	0.8
3–5 hours	—	—	1.0	0.6
6 hours or more	—	—	1.3	0.8
Time spent on homework				
None was assigned	—	—	1.2	0.9
Did not do it	—	—	1.6	2.0
Less than 1 hour	—	—	1.0	0.7
1 to 2 hours	—	—	1.1	0.8
More than 2 hours	—	—	1.7	1.1

Table D19

Standard errors for average reading performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1971 to 1984, continued

17-year-olds	1971	1975	1980	1984
Total	1.2	0.7	1.1	0.9
Sex				
Male	1.2	0.8	1.2	0.9
Female	1.3	0.8	1.2	1.0
Observed ethnicity/race				
White[1]	1.0	0.6	0.9	0.7
Black	1.6	1.7	1.8	1.2
Hispanic	—	[2]2.9	[2]2.6	[2]1.9
Region				
Northeast	—	1.5	1.8	1.9
Southeast	—	1.3	2.6	2.0
Central	—	1.3	2.3	1.5
West	—	1.6	1.7	1.6
Parental education				
Not graduated high school	1.4	1.0	1.5	1.3
Graduated high school	1.0	0.9	0.9	0.9
Post high school	1.1	0.6	1.0	0.8
Size/type of community				
Rural	[2]3.1	[2]2.3	[2]3.7	[2]2.7
Disadvantaged urban	[2]2.6	[2]3.6	[2]2.7	[2]2.1
Advantaged urban	[2]2.0	1.3	[2]1.6	1.9
Reading material in the home				
0–2 items	1.8	1.7	1.9	1.4
3 items	1.4	0.9	1.5	1.1
4 items	1.0	0.6	1.0	0.7
Television watched per day				
0–2 hours	—	—	1.1	0.8
3–5 hours	—	—	1.1	0.9
6 hours or more	—	—	2.2	1.3
Time spent on homework				
None was assigned	—	—	1.2	1.0
Did not do it	—	—	1.4	1.2
Less than 1 hour	—	—	1.6	1.0
1 to 2 hours	—	—	1.3	1.0
More than 2 hours	—	—	2.2	1.2

—Not available.

[1] includes Hispanic in 1971.

[2] Interpret with caution. Standard errors are poorly estimated due to small sample size.

SOURCE: National Assessment of Educational Progress, *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report 15-R-01), 1985.

Table D20

Standard errors for average science performance of 9-, 13-, and 17-year-old students, by selected characteristics and school year (Table A2)

9-year-olds[1]	1970	1973	Change	1973	1977	Change
Total	0.4	0.4	0.6	0.4	0.4	0.6
Sex						
Male	0.2	0.2	0.2	0.2	0.2	0.2
Female	0.2	0.1	0.2	0.2	0.2	0.2
Race						
White	0.2	0.3	0.4	0.2	0.3	0.4
Black	0.7	0.6	0.9	0.6	0.7	0.9
Region						
Northeast	0.5	0.6	0.8	0.6	0.6	0.9
Southeast	0.7	0.9	1.1	0.8	0.9	1.1
Central	0.6	0.8	1.0	0.7	0.8	1.1
West	0.7	0.8	1.0	0.7	0.7	1.0
Parental education						
Not graduated high school	0.6	0.5	0.8	0.5	0.6	0.8
Graduated high school	0.4	0.3	0.5	0.3	0.3	0.4
Post high school	0.3	0.2	0.4	0.3	0.3	0.4
Size and type of community						
Rural	1.3	1.0	1.6	0.9	1.1	1.4
Disadvantaged urban	1.1	0.8	1.4	0.7	1.3	1.5
Advantaged urban	0.7	0.8	1.1	0.9	0.8	1.2
Main big city	0.7	0.8	1.0	0.7	1.0	1.2
Urban fringe	0.7	0.7	1.0	0.7	0.6	0.9
Medium city	0.6	1.1	1.3	0.9	1.4	1.6
Small places	0.4	0.5	0.6	0.5	0.5	0.7

Table D20

Standard errors for average science performance of 9-, 13-, and 17-year-old students, by selected characteristics and school year, continued

13-year-olds	1970	1973	Change	1973	1977	Change	1977	1982	Change
Total	0.4	0.5	0.6	0.4	0.4	0.6	—	—	0.8
Sex									
Male	0.2	0.2	0.3	0.2	0.2	0.2	—	—	0.8
Female	0.2	0.2	0.3	0.2	0.2	0.2	—	—	0.8
Race									
White	0.3	0.3	0.4	0.3	0.3	0.4	—	—	—
Black	0.5	0.6	0.8	0.5	1.0	1.1	—	—	—
Region									
Northeast	0.6	0.8	1.0	0.6	0.7	1.0	—	—	1.5
Southeast	0.9	0.8	1.2	0.7	0.6	0.9	—	—	1.6
Central	0.6	0.8	1.0	0.7	0.7	1.0	—	—	1.5
West	0.6	0.8	1.0	0.7	0.7	1.0	—	—	1.5
Parental education									
Not graduated high school	0.5	0.5	0.7	0.5	0.6	0.7	—	—	—
Graduated high school	0.3	0.3	0.4	0.3	0.3	0.4	—	—	—
Post high school	0.3	0.3	0.4	0.2	0.2	0.3	—	—	—
Size and type of community									
Rural	1.2	1.2	1.7	1.1	0.9	1.4	—	—	—
Disadvantaged urban	1.1	1.3	1.7	1.2	1.4	1.8	—	—	—
Advantaged urban	0.8	0.6	1.0	0.6	0.6	0.8	—	—	—
Main big city	0.8	0.9	1.2	0.8	1.0	1.3	—	—	—
Urban fringe	0.6	0.6	0.9	0.6	1.0	1.2	—	—	—
Medium city	1.0	1.2	1.6	1.1	1.0	1.5	—	—	—
Small places	0.5	0.4	0.7	0.4	0.4	0.6	—	—	—

Table D20

Standard errors for average science performance of 9-, 13-, and 17-year-old students, by selected characteristics and school year, continued

17-year-olds	1970	1973	Change	1973	1977	Change	1977	1982	Change
Total	0.3	0.3	0.5	0.4	0.4	0.6	—	—	0.8
Sex									
Male	0.2	0.2	0.3	0.4	0.4	0.3	—	—	0.9
Female	0.2	0.2	0.3	0.2	0.2	0.3	—	—	0.8
Race									
White	0.2	0.2	0.3	0.2	0.2	0.3	—	—	—
Black	0.7	0.4	0.8	0.5	0.5	0.7	—	—	—
Region									
Northeast	0.6	0.5	0.8	0.6	0.8	1.0	—	—	1.5
Southeast	0.6	0.6	0.9	0.7	0.7	1.0	—	—	1.6
Central	0.5	0.6	0.8	0.6	0.6	0.9	—	—	1.5
West	0.5	0.6	0.8	0.6	0.7	1.0	—	—	1.6
Parental education									
Not graduated high school	0.4	0.4	0.6	0.4	0.4	0.6	—	—	—
Graduated high school	0.3	0.3	0.4	0.3	0.2	0.4	—	—	—
Post high school	0.2	0.2	0.3	0.2	0.2	0.3	—	—	—
Size and type of community									
Rural	1.0	0.8	1.3	0.8	0.9	1.2	—	—	—
Disadvantaged urban	1.1	1.1	1.5	1.0	1.3	1.6	—	—	—
Advantaged urban	0.7	0.8	1.0	0.8	1.3	1.5	—	—	—
Main big city	0.8	0.8	1.2	1.0	1.0	1.4	—	—	—
Urban fringe	0.7	0.8	1.0	0.8	0.7	1.1	—	—	—
Medium city	0.8	0.8	1.2	0.8	1.4	1.6	—	—	—
Small places	0.4	0.4	0.6	0.4	0.5	0.6	—	—	—

—Standard errors not available.

[1] Data from the 1982 Science Assessment and Research Project is not included for 9-year-olds because change for total content items was not reported.

SOURCES: National Assessment of Educational Progress, *Three National Assessments of Science, 1969–77: Changes in Achievement*, 1978. Science Assessment and Research Project, *Images of Science*, 1983.

Table D21

Standard errors for average proficiency scores on the literacy scales for the young adult population, by selected characteristics: 1985 (Table A6)

Selected characteristics	NAEP reading scale	Prose scale	Document scale	Quantitative scale
Total	2.0	2.0	1.9	2.1
Sex				
Male	2.3	2.6	2.6	2.8
Female	2.3	2.1	1.9	2.3
Race/ethnicity				
White	2.0	1.9	1.9	2.2
Black	2.4	2.4	2.8	2.3
Hispanic	4.7	4.5	4.4	5.0
Other	9.0	6.5	5.1	6.7
Region				
Northeast	3.6	2.9	2.5	4.1
Southeast	3.1	5.9	4.4	3.6
Central	3.8	3.8	3.7	3.9
West	4.6	4.4	4.5	4.2
Respondent education				
Less than high school	8.3	11.0	11.9	10.4
Some high school	3.5	4.0	3.9	3.5
High school, some postsecondary	1.7	2.0	1.9	2.2
2-year, 4-year degree or more	2.6	1.9	1.9	2.3
Parental education				
Less than high school	5.2	5.8	5.8	4.9
Some high school	3.0	3.7	2.4	3.8
High school, some postsecondary	1.7	2.3	2.2	1.7
2-year, 4-year degree or more	3.5	2.5	2.7	3.2
Twelve month employment status				
Full time, all year	2.1	2.5	2.0	2.4
Part time, all year	3.8	3.6	3.9	4.1
Full time, part year	3.7	3.8	3.3	3.4
Part time, part year	5.9	6.1	4.7	4.8
Unemployed	7.3	9.4	6.5	7.2
In school	7.8	5.8	6.3	6.8
Keeping house	7.7	9.2	5.1	8.7

SOURCE: Kirsch, I., and Jungeblut, A. *Literacy: Profiles of America's Young Adults*, Final Report (Report No. 16–PL–01). Princeton, NJ: National Assessment of Educational Progress, 1986.

E. Glossary

Achievement test: An examination that measures the extent to which a person has acquired certain information or mastered certain skills, usually as a result of specific instruction.

Agriculture: Courses designed to improve competencies in agricultural occupations. Included is the study of agricultural production, supplies, mechanization and products, ornamental horticulture, forestry, and the services related thereto.

American College Testing Program (ACT): An examination used to predict the facility with which the individual will progress in learning college-level academic subjects.

Appropriations: An authorization granted by a legislative body to make expenditures and to incur obligations for specific purposes.

Auxiliary enterprises: Enterprises of higher education institutions managed as essentially self-supporting activities. Examples are residence halls, food services, student health services, college unions, college stores, etc.

Average daily attendance (ADA): The aggregate days attendance of a given school during a given reporting period divided by the number of days school is in session during this period. Only days on which the students are under the guidance and direction of teachers should be considered as days in session. The average daily attendance for groups of schools having varying lengths of terms is the sum of the average daily attendances obtained for the individual schools.

Average daily membership (ADM): The aggregate membership of a school during a reporting period divided by the number of days school is in session during this period. Only days on which the pupils are under the guidance and direction of teachers should be considered as days in session. The average daily membership for groups of schools having varying lengths of terms is the average of the average daily memberships obtained for the individual schools.

Bachelor's degree: A degree granted for the successful completion of a baccalaureate program of studies, usually requiring at least 4 years (or equivalent) of full-time, college-level study.

Business: Includes business and management, business and office operations, and marketing and distribution.

Business and management: Instructional programs that describe the processes of purchasing, selling, producing, and interchanging of goods, commodities, and services in profit-making and nonprofit public and private institutions and agencies.

Carnegie unit: A standard of measurement that represents one credit for the completion of a 1-year course in a secondary school.

Catholic school: A private school over which in most cases a parent Catholic church group exercises some control or to which it provides some form of subsidy. Catholic schools include those affiliated with the Roman Catholic Church, including the "private" Catholic schools operated by religious orders.

Central cities: The largest cities with 50,000 or more inhabitants in a Metropolitan Statistical Area (MSA). A smaller city within a MSA may also qualify if it has at least 25,000 inhabitants or has a population of one-third or more of that of the largest city and a minimum population of 25,000. An exception occurs where 2 cities have contiguous boundaries and constitute, for economic and social purposes, a single community of at least 50,000, the smaller of which must have a population of at least 15,000. (See also *Metropolitan-nonmetropolitan residence* and *Metropolitan Statistical Area.*)

Class size: The membership of a class at a given date.

Classroom teacher: A staff member assigned the professional activity of instructing students in classroom situations for which daily student attendance figures for the school system are kept.

Cohort: A group of individuals having a statistical factor in common, e.g., year of birth.

College: A postsecondary school that offers programs of education, usually leading to a first degree. Junior colleges and community colleges are included under this terminology.

Computer and information science: Instructional programs that describe the coding, processing, and storage of data through repetitious and highly complex mathematical operations at high speed, and in accordance with strictly defined systems and procedures.

Control of institutions: A classification of institutions of higher education by whether the institution is operated by publicly elected or appointed officials (public control) or by privately elected or appointed officials and derives its major source or funds from private sources (private control).

Constant dollars: Dollar amounts that have been adjusted by means of price and cost indexes to eliminate inflationary factors and allow direct comparison across years.

Consumer Price Index: A monthly measure, compiled by the U.S. Bureau of Labor Statistics, of changes in the price of goods and services consumed by urban families and individuals. The index includes a group of about 300 goods and services, ranging from food to automobiles, and from rent to haircuts, normally purchased by urban wage earners.

Consumption: The portion of income that is spent on the purchase of goods and services rather than being saved.

Consumption tax: A levy on consumer goods; the base of a consumption tax levied on the buyers or sellers of products is the amount or value of goods bought or sold.

Credit: The unit of value, awarded for the successful completion of certain courses, intended to indicate the quantity of course instruction in relation to the total requirements for a diploma, certificate, or degree. Credits are frequently expressed in terms such as "Carnegie units," "credits," "semester credit hours," and "quarter credit hours."

Current dollars: Dollar amounts that have not been adjusted to compensate for inflation.

Current expenditure: The total charges incurred for the benefits of the current fiscal year, except for capital outlay and debt service.

Current expenditure per student: Current funds expenditure divided by a count of students in postsecondary or higher education. The count of students may be a head count or a full-time equivalent count.

Current expenditures per pupil in average daily attendance: Current expenditures for the regular school term divided by the average daily attendance of full-time pupils (or full-time equivalency of pupils) during the term.

Current funds expenditures (higher education): Money spent to meet current operating costs, including salaries, wages, utilities, student services, public services, research libraries, scholarships and fellowships, auxiliary enterprises, hospitals, and independent operations. Excludes loans, capital expenditures, and investments.

Current (funds) revenues: Money received during the current fiscal year from revenue that can be used to pay obligations currently due, and surpluses reappropriated for the current fiscal year.

Doctor's degree: A program of instruction requiring at least 3 years of full-time equivalent academic work beyond the baccalaureate degree, the completion of which results in a doctoral degree conferred by the faculty and ratified by the governing board of the institution granting the degree.

Education: Instructional programs that describe the art or processes of imparting knowledge, developing the powers of reasoning and judgment, and preparing others intellectually for a more mature life.

Educational and general expenditures: The sum of current funds expenditures on instruction, research, public service, academic support, student services, institutional support, operation and maintenance of plant, and awards from restricted and unrestricted funds.

Educational and general revenues (higher education): Include current funds minus sales and services of auxiliary enterprises, sales and services of hospitals, revenues from independent operations and revenues from other sources (includes all items or revenues not covered elsewhere in the HEGIS survey form, for example, interest income).

Elementary education/programs: Learning experiences concerned with the knowledge, skills, appreciations, attitudes, and behavioral characteristics that are considered to be needed by all pupils in terms of their awareness of life within our culture and the world of work and that normally may be achieved during the elementary school years as defined by applicable State laws and regulations.

Elementary school: A school classified as elementary by State and local practice and composed of any span of grades not above grade 8. A preschool or kindergarten school is included under this heading only if it is an integral part of an elementary school or a regularly established school system.

Elementary/secondary school: As reported in this publication, includes only regular schools, that is, schools that are part of State and local school systems, and also most nonprofit private elementary/secondary schools, both religiously affiliated and nonsectarian. Schools not reported include subcollegiate departments of institutions of higher education, residential schools for exceptional children, Federal schools for Indians, and Federal schools on military posts and other Federal installations.

Engineering and engineering technologies: Instructional programs that describe the mathematical and natural sciences gained by study, experience, and practice and applied with judgment to develop ways to economically utilize the materials and forces of nature for the benefit of mankind. Includes programs that prepare individuals to support and assist engineers and similar professionals.

English: A group of instructional programs that describes the English language arts, including composition, creative writing, and the study of literature.

Errollment: The total number of students in a given school unit.

Expenditures: Charges incurred, whether paid or unpaid, presumed to benefit the current fiscal year. For elementary/secondary schools, these include all charges for current outlays plus capital outlays and interest on school debt. For institutions of higher education, these include current outlays plus capital outlays. For government, these include charges net of recoveries and other correcting transactions—other than for retirement of debt, investment in securities, extension of credit, or as agency transaction. Government expenditures include only external transactions, such as the provision of perquisites or other payments in kind. Aggregates for groups of governments exclude intergovernmental transactions among the governments.

Expenditures per pupil: Charges incurred for a particular period of time divided by a student unit of measure, for example, average daily attendance or average daily membership.

Financial aid package: That combination of grants, loans, and college work-study awards that a student receives from individuals, institutions, or governmental entities to help defray the cost of attending a postsecondary institution. Does not include funds received from parents, spouse, or other relative, or student earnings.

First-professional degree: A program of instruction the completion of which results in a first-professional degree conferred by the faculty and ratified by the governing board of the institution granting the degree. In addition, the first-professional degree (1) signifies completion of the academic requirements to practice in the profession; (2) requires at least 2 years of full-time equivalent college level work prior to entrance; and (3) usually requires a total of at least 6 years of full-time equivalent academic work to complete the degree program, including prior college-level work plus the length of the professional program itself. The Center for Statistics recognizes 10 professional fields: Chiropractic, Dentistry, Law, Medicine, Optometry, Osteopathy, Pharmacy, Podiatry, Theology, and Veterinary Medicine.

Fiscal year: A 12-month period at the end of which a school district or postsecondary institution determines its financial condition and the results of its operations and closes its books. The most common fiscal year begins July 1 and ends the following June 30. The Federal fiscal year begins October 1 and ends the following September 30.

Foreign languages: A group of instructional programs that describes the structure and use of a language other than English that is common or indigenous to people of the same community or nation, the same geographical area, or the same cultural traditions; including such features as sound, literature, syntax, phonology, semantics, sentences, prose and verse, as well as the development of skills and attitudes used in communicating and evaluating thoughts and feelings through oral and written language.

Full-time equivalent enrollment (FTE): For institutions of higher education, enrollment of full-time and the sum of part-time students divided by a standard number of credits and reported by the institution. In the absence of an equivalent reported by the institution, the FTE is estimated by adding one-third of part-time to full-time enrollment.

Full-time students (higher education): Students enrolled in courses with total credit equal to at least 75 percent of the normal full-time course load.

General educational development (GED) program: Academic instruction to prepare persons to take the high school equivalency examination.

GED recipients: Persons who have obtained certification of high school equivalency because they have met State requirements and passed an approved exam, which is intended to provide an appraisal of their achievement or performance in the broad subject matter areas usually required for high school graduation.

General program: A program of studies designed to prepare students for the common activities of persons as citizens, family members, and workers. A general program of studies may include instruction in both academic and vocational areas.

Geographic regions: (1) Regions used by the Bureau of Economic Analysis of the U.S. Department of Commerce, the National Assessment of Educational Progress, and the National Education Association, as follows: (The National Education Association designated the Central region as Middle region in its classification.)

Northeast

Connecticut
Delaware
District of Columbia
Maine
Maryland
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Rhode Island
Vermont

Southeast

Alabama
Arkansas
Florida
Georgia
Kentucky
Louisiana
Mississippi
North Carolina
South Carolina
Tennessee
Virginia
West Virginia

Central (Middle)

Illinois
Indiana
Iowa
Kansas
Michigan
Minnesota
Missouri
Nebraska
North Dakota
Ohio
South Dakota
Wisconsin

West

Alaska
Arizona
California
Colorado
Hawaii
Idaho
Montana
Nevada
New Mexico
Oklahoma
Oregon
Texas
Washington
Wyoming

(2) Regions and divisions used by the U.S. Bureau of the Census in Current Population Survey tabulations, as follows:

Northeast

(New England)

Maine
New Hampshire
Vermont
Massachusetts
Rhode Island
Connecticut

(Middle Atlantic)

New York
New Jersey
Pennsylvania

Midwest

(East North Central)

Ohio
Indiana
Illinois
Michigan
Wisconsin

(West North Central)

Minnesota
Iowa
Missouri
North Dakota
South Dakota
Nebraska
Kansas

South

(South Atlantic)

Delaware
Maryland
District of Columbia
Virginia
West Virginia
North Carolina
South Carolina
Georgia
Florida

(East South Central)

Kentucky
Tennessee
Alabama
Mississippi

(West South Central)

Arkansas
Louisiana
Oklahoma
Texas

West

(Mountain)

Montana
Idaho
Wyoming
Colorado
New Mexico
Arizona
Utah
Nevada

(Pacific)

Washington
Oregon
California
Alaska
Hawaii

Government appropriation: Amounts received from or made available to the institution through acts of a legislative body, except grants or contracts.

Government grants and contracts: Revenues from governmental agencies for specific research projects or other types of programs.

Graduate: An individual who has received formal recognition for the successful completion of a prescribed program of studies.

Graduate student: A student who holds a bachelor's or first-professional degree, or equivalent, and is taking courses at the postbaccalaurate level. These students may or may not be enrolled in graduate programs.

Graduation: Formal recognition given to a pupil for the successful completion of a prescribed program of studies.

High school: A secondary school offering the final years of high school work necessary for graduation, usually including grades 10, 11, and 12 (in a 6-3-3 plan) or grades 9, 10, 11, and 12 (in a 6-2-4 plan).

Higher education: Study beyond the secondary school level at an institution that offers programs terminating in an associate, baccalaureate, or higher degree.

Higher education institutions (new classification):

Doctoral-granting: These institutions are characterized by a significant level and breadth of activity in commitment to doctoral-level education as measured by the number of doctorate recipients and the diversity in doctoral-level program offerings.

Comprehensive: These institutions are characterized by diverse postbaccalaureate programs (including first-professional), but do not engage in significant doctoral-level education.

General baccalaureate: These institutions are characterized by their primary emphasis on general undergraduate, baccalaureate-level education. They are not significantly engaged in postbaccalaureate education.

Specialized: These baccalaureate or postbaccalaureate institutions are characterized by a programmatic emphasis in one area (plus closely related specialties), such as business or engineering. The programmatic emphasis is measured by the percentage of degrees granted in the program area.

2-year: These institutions confer at least 75 percent of their degrees and awards for work below the bachelor's level.

New institutions: These institutions are new additions to the Higher Education General Information Survey (HEGIS) Universe (not necessarily newly organized). When degree and award data become available, they will be reclassified.

Non-degree granting: These institutions offer undergraduate or graduate-level study, but do not confer degrees or awards.

Higher education institutions (traditional classification):

4-year institutions: A higher education institution legally authorized to offer and offering at least a 4-year program of college-level studies wholly or principally creditable toward a baccalaureate degree. Within this category, a university is a postsecondary institution which typically comprises one or more graduate and professional schools.

2-year institutions: A higher education institution legally authorized to offer and offering at least a 2-year program of college-level studies that terminates in an associate degree or is principally creditable toward a baccalaureate degree.

Higher education institutions (types of admissions classification):

Selective admissions: Generally confines admissions to students from the top quarter of their high school class.

Traditional admissions: Accepts only students from the top half of their high school class.

Liberal admissions: Accepts some students from the lower half of their high school class.

Open admissions: Accepts all high school graduates.

Higher education price index (HEPI): This index measures average changes in prices of goods and services purchased by colleges and universities through current-fund educational and general expenditures. The HEPI is based on the prices (or salaries) of professional personnel (for example, faculty), non-professional personnel (for example, clerical), and contracted services (for example, data processing). The quantity of these goods and services have been kept constant based on the 1971-72 buying pattern of colleges and universities. For further details, see *Higher Education Prices and Price Indexes: 1985 Update*, Research Associates of Washington, 2605 Klingle Rd., NW., Washington, DC 20008.

Home Economics: Includes courses of instruction organized for purposes of enabling pupils to acquire knowledge and develop understanding, attitudes, and skills relevant to (a) personal, home, and family life, and (b) occupational preparation using the knowledge and skills of home economics.

Humanities: Instructional programs in the following fields: area and ethnic studies, foreign languages, letters, liberal/general studies, multi/interdisciplinary studies, philosophy and religion, theology, and the visual and performing arts.

Income tax: Tax levied on individual and corporate incomes. The basic purpose of the tax is to finance government operations.

Independent operations: When undertaken by institutions of higher education, operations unrelated to the primary mission of these institutions (that is, instruction, research, public service). Generally includes operations of federally funded research and development centers.

Inflation: A persistent upward movement in general price levels that results in a decline of purchasing power.

Institutions of higher education: Institutions providing education above the instructional level of the secondary school, usually beginning with grade 13. Typically, these institutions include colleges, universities, graduate schools, professional schools, and other degree granting institutions.

Instructional staff: Number of positions, not the number of different individuals occupying the positions during the school year. In local schools includes all public elementary and secondary (junior and senior high) day-school positions (or full-time equivalents) that are in the nature of teaching or in the improvement of the teaching-learning situation. Includes consultants or supervisors of instruction, principals, teachers, guidance personnel, librarians, psychological personnel, and other instructional staff. Excludes attendance personnel, clerical personnel, and junior college staff.

Intermediate administrative unit: An administrative unit smaller than the State that exists primarily to provide consultative, advisory, administrative, or statistical services to local basic administrative units, or to exercise certain regulatory functions over local basic administrative units. An intermediate unit may operate schools and contract for school services, but it does not exist primarily to render such services. Such units may or may not have taxing and bonding authority.

Junior high school: A separately organized and administered secondary school intermediate between the elementary and senior high schools, usually including grades 7, 8, and 9 (in a 6-3-3 plan) or grades 7 and 8 (in a 6-2-4 plan).

Labor force: Persons are classified as in the labor force if they are 14 years of age or older, employed as civilians, unemployed but looking for work, or in the Armed Forces.

Letters: Instructional programs that describe sounds, literature, syntax, phonology, morphology, semantics, sentences, prose and verse, as well as the development of skills and attitudes used in communication and evaluating thought and feelings through oral and written language.

Liberal/general studies: Instructional programs that describe the foundation necessary for understanding the self and society through an appreciation of the concerns of civilization and our common heritage.

Mandatory transfer: Mandatory transfers from current funds are transfers of funds that must be made in order to fulfill a binding legal obligation of the institution. Included under mandatory transfers are debt service provisions relating to academic and administrative buildings, including (1) amounts set aside for debt retirement and interest, and (2) required provisions for renewal and replacement of buildings to the extent these are not financed from other services.

Master's degree: A program of instruction requiring at least 1 but not more than 2 years of full-time equivalent academic work beyond the baccalaureate degree, the completion of which results in a master's degree conferred by the faculty and ratified by the governing board of the institution granting the degree.

Mathematics: A group of instructional programs that describes the science of logical symbolic language and its application.

Mean test score: The score obtained by dividing the total sum of scores of all individuals in a group by number of individuals in that group.

Metropolitan-nonmetropolitan residence: The population residing in Metropolitan Statistical Areas (MSA's) constitutes the metropolitan population. Except in New England, an MSA is a county (or group of contiguous counties) that contains at least 1 city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county, or counties, containing such a city or cities, contiguous counties are included in an MSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, MSA's consist of towns and cities, rather than counties. (See also Central Cities and Metropolitan Statistical Area.)

Metropolitan Statistical Area (MSA): A large population nucleus and nearby communities that have a high degree of economic and social integration with that nucleus. Each MSA consists of one or more entire counties (or county equivalents) that meet specified standards pertaining to population, commuting ties, and metropolitan character. In New England, towns and cities, rather than counties, are the basic units. MSA's are designated by the Office of Management and Budget. An MSA includes a city and, generally, its entire urban area and the remainder of the county or counties in which the urban area is located. An MSA also includes additional outlying counties that meet specified criteria relating to metropolitan character and level of commuting of workers into the central city or counties. Specified criteria governing the definition of MSA's recognized before 1980 are published in *Standard Metropolitan Statistical Areas: 1975,* issued by the Office of Management and Budget. New MSA's were designated when 1980 counts showed that they met one or both of the following criteria:

1. Included a city with a population of at least 50,000 within its corporate limits, or
2. Included a Census Bureau-defined urbanized area (which must have a population of at least 50,000) and a total MSA population of at least 100,000 (or, in New England, 75,000). (See also *Central cities* and *Metropolitan-nonmetropolitan residence.*)

Middle School: A separately organized and administered school usually beginning with grade 5 or 6, with a program designed specifically for the early adolescent learner. Most middle schools presume, in ultimate plan if not in present reality, a 4-year high school for the grade or grades which follow, as in a 4-4-4 plan or a 5-3-4 plan.

Migration: Geographic or spatial mobility involving a change of usual residence between clearly defined geographic units, that is, counties, States, regions.

Minimum-competency testing: Measuring the acquisition of competence or skills to or beyond a certain specified standard.

Multi/interdisciplinary studies: Instructional programs, the components of which derive from two or more separate conventional academic instructional programs.

Newly qualified teacher: The designation assigned to persons who meet both of the following criteria: (1) they first became eligible for a teaching license during the period of the study referenced; or they were not certified or eligible for a teaching license, but were teaching at the time of survey, and; (2) they never held full-time, regular teaching positions (as opposed to substitute) prior to completing the requirements for the degree that brought them into the survey.

Nonsupervisory instructional staff: Persons such as curriculum specialists, counselors, librarians, remedial specialists, and others possessing education certification but who are not responsible for regular day-to-day teaching of the same group of pupils.

Other courses: Includes courses in agriculture; architecture and environmental design; area and ethnic studies; communications; computer and information sciences; consumer, personal and miscellaneous services; education; engineering; health; industrial arts; law; liberal/general studies; library and archival sciences; military sciences; multi/interdisciplinary studies; parks and recreation; philosophy, religion, and theology; psychology; public affairs and protective services; special vocational education programs; and exceptional student education.

Part-time student: Undergraduate—A student enrolled for either 11 semester credits or less, or 11 quarter credits or less, or less than 24 contact hours per week. *Graduate*—A student enrolled for either 8 semester credits or less, or 8 quarter credits or less.

Personal and social development courses: Includes courses in the following: basic skills, citizenship/civic activities, health-related activities, interpersonal skills, leisure and recreational activities, and personal awareness.

Philosophy and religion: Instructional programs that describe the critical examination of the categories for describing reality, the nature and contexts of human experience, the methodology of rational inquiry and criteria of practice (philosophy); and the investigation of organized forms, beliefs, and practices related to eternal principles or transcendant spiritual entities (religion).

Physical and biological sciences: Physical sciences are instructional programs that describe inanimate objects, processes, or matter, energy, and associated phenomena. Biological sciences are instructional programs that describe the systematic study of living organisms. (See also *Science*.)

Postsecondary institution: An institution providing instructional programs for persons who have completed or otherwise left educational programs in elementary and secondary school.

Private institution: An institution controlled by one or more individuals other than a State, a subdivision of a State, or the Federal government and which is usually supported primarily through private funds.

Private school: A school (1) controlled by an individual or agency other than a State, a subdivision of a State, or the Federal government; (2) usually supported primarily by other than public funds; and (3) the operation of whose program rests with other than publicly elected or appointed officials.

Property tax: A tax on the value of real estate, that is, on land and on such improvements on land as residential, commercial, and industrial buildings.

Public institution: An institution that is operated by publicly elected or appointed school officials, in which the programs and activities are under the control of public officials, and that derives its primary support from public funds.

Public school: A school operated by publicly elected or appointed school officials, in which the program and activities are under the control of these officials, and which is supported primarily by public funds.

Pupil-classroom teacher ratio: The average daily membership of pupils, for a given period of time, divided by the number representing the total full-time equivalency of classroom teaching assignments serving these pupils during the same period.

Racial/ethnic group: Classification indicating general racial or ethnic heritage based on self-identification, as in data collected by the Bureau of the Census, or on observer identification, as in data collected by the Office for Civil Rights. These categories are in accordance with the Office of Management and Budget standard classification scheme presented below:

White: A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Black: A person having origins in any of the black racial groups in Africa.

Hispanic: A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin.

Asian or Pacific Islander: A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, China, India, Japan, Korea, the Philippine Islands, and Samoa.

American Indian or Alaskan Native: A person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition.

Remedial education: In the areas of, for example, reading, writing, and math, instruction for a student lacking those skills necessary to perform work at the level required by the attended institution.

Revenues: All funds received from external sources, net of refunds, and correcting transactions. Noncash transactions such as receipt of services, commodities, or other receipts "in kind" are excluded, as are funds received from the issuance of debt, liquidation of investments, and nonroutine sale of property.

Salary: The total amount regularly paid or stipulated to be paid to an individual, before deductions, for personal services rendered while on the payroll of a business or organization.

Sales tax: Taxes imposed upon the sale and consumption of goods and services. It can be imposed either as a general tax on the retail price of all goods and/or services sold, or as a tax upon the sale of selected goods and services.

Scholastic Aptitude Test (SAT): An examination used to predict the facility with which the individual will progress in learning college-level academic subjects.

School: A division of the school system consisting of students comprising one or more grade groups or other identifiable groups, organized as one unit with one or more teachers to give instruction of a defined type, and housed in a school plant of one or more buildings.

School climate: The social system and culture of the school, including the organizational structure of the school and values and expectations within it.

School district: An educational agency at the local level that exists primarily to operate public schools or to contract for public school services. This term is used synonymously with the terms "local basic administrative unit" and "local education agency."

School year: The 12-month period of time denoting the beginning and ending dates for school accounting purposes, usually from July 1 through June 30.

Science: Includes the body of related courses, organized for carrying on learning experiences concerned with knowledge of the physical and biological world, and of the processes of discovery and validating this knowledge. (See also *Physical and biological sciences*.)

Secondary instructional level: The general level of instruction provided for pupils in secondary schools and any instruction of a comparable nature and difficulty provided for adults and youth beyond the age of compulsory school attendance.

Secondary school: A school comprising any span of grades beginning with the next grade following an elementary or middle-school and ending with or below grade 12.

Senior high school: A secondary school offering the final years of high school work necessary for graduation and invariably preceded by a junior high school or middle school.

Social sciences: Instructional programs that describe the substantive portions of behavior, past and present activities, interactions, and organizations of people associated together for religious, benevolent, cultural, scientific, political, patriotic, or other purposes.

Socioeconomic status (SES): For the High School and Beyond study and the National Longitudinal Study of the High School Class of 1972, the SES index is a composite of five equally weighted, standardized components: father's education, mother's education, family income, father's occupation, and household items. The terms high, middle, and low SES refer to the upper, middle two, and lower quartiles of the weighted SES composite index distribution.

Standardized test: An examination for which there are data on reliability and validity, administered and scored according to specific instructions, and capable of being interpreted in terms of adequate norms.

Standardized test performance: The weighted distributions of composite scores from standardized tests used to group students according to performance.

Student: An individual for whom instruction is provided in an educational program under the jurisdiction of a school, school system, or other education institution. No distinction is made between the terms "student" and "pupil": the term "student" is used to include individuals at all instructional levels. A student may receive instruction in a school facility or in another location, such as at home or in a hospital. Instruction may be provided by direct student-teacher interaction or by some other approved medium such as television, radio, telephone, and correspondence.

Student financial aid: Funds provided to students attending a postsecondary institution to assist them in defraying the costs of attendance. Such funds may take the form of a grant, scholarship, fellowship, a low-interest loan, or a part-time job with wages paid out of governmental and institutional funds.

Supervisory staff: Principals, assistant principals, and supervisors of instruction (does not include superintendents or assistant superintendents).

Tax base: The objective basis on which a tax is imposed. Some of the more common objects of taxation are income, property, and the value of certain goods sold (sales tax).

Tax incidence: The final resting place of the tax burden. By shifting the tax forward or backward, the burden of the original tax can be transferred from one person to another. The incidence of the tax falls on the person who cannot shift it any further.

Tax revenue: The income of a government from taxation appropriated from public expenses.

Trade and industry courses: Includes courses in construction trades, mechanics and repairs, precision production, and transportation and material moving.

Teacher shortage: Number of teaching positions for which a teacher was sought and could not be found during the recruiting period and for which the opening was vacant or was withdrawn, abolished, or transferred to another field. Also includes positions for which a temporary substitute was hired.

Tuition and fees: A payment or charge for instruction, or compensation for services, privileges, or for the use of equipment, books, or other goods.

Undergraduate students (higher education): Students registered at an institution of higher education who have not completed requirements for a bachelor's degree.

Unemployed: Civilians who, during a survey period, had no employment but were available for work and (1) had engaged in any specific jobseeking activity within the past 4 weeks, or (2) were waiting to be called back to a job from which they had been laid off, or (3) were waiting to report to a new wage or salary job within 30 days.

University: An institution of higher education consisting of a liberal arts college, offering a program of graduate study, and having usually two or more graduate or professional schools or faculties and empowered to confer degrees in various fields of study.

Visual and performing arts: Includes courses in crafts, dance, design, dramatic arts, film arts, fine arts, graphic arts technology, and music.

Year-round, full-time worker: One who worked primarily at full-time civilian jobs for 50 weeks or more during the preceding calendar year.

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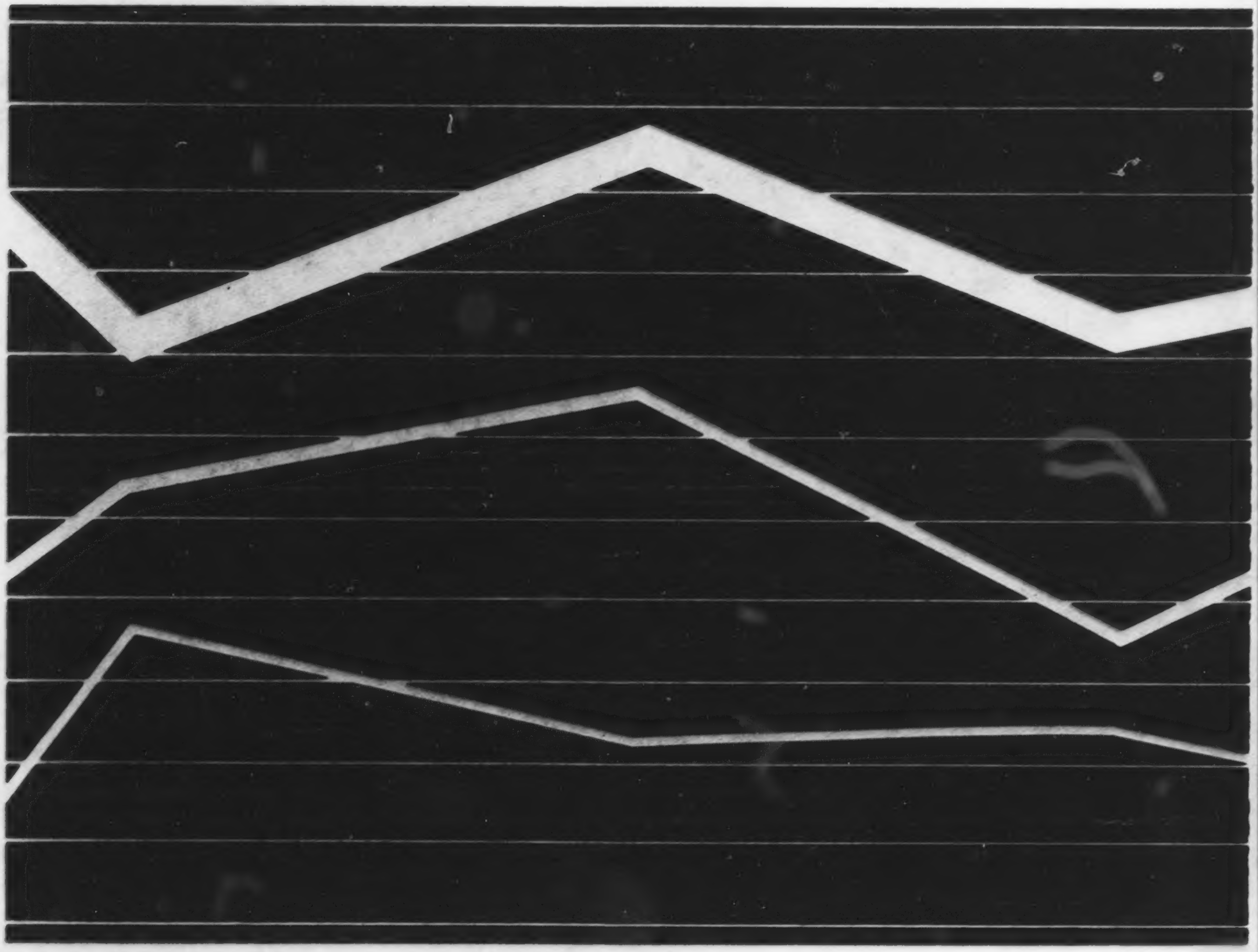

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